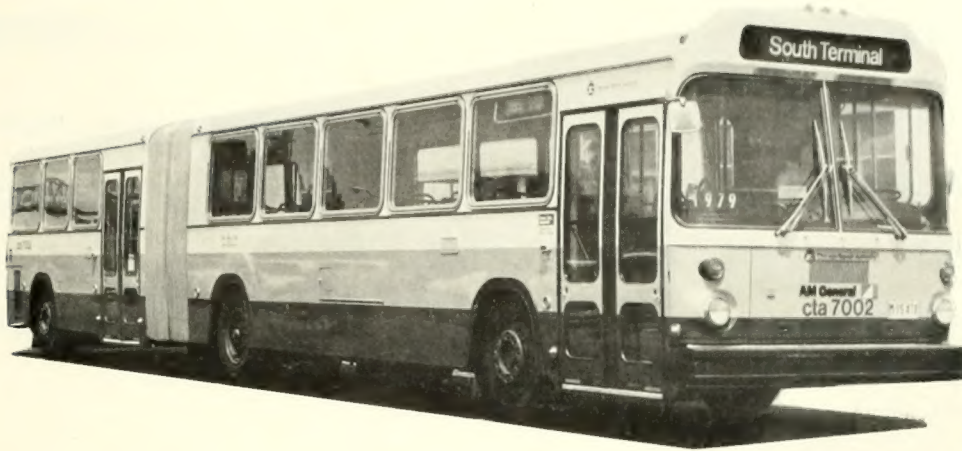


Photographs



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Chicago Transit Authority
General Operations Division
Engineering Department
Equipment Engineering
June 1980



CHICAGO TRANSIT AUTHORITY

BUS SERIES 7000 - 7019

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CHICAGO TRANSIT AUTHORITY
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CHICAGO TRANSIT AUTHORITY

BUS SERIES 7000 - 7019

CTA SPECIFICATION ABC - 1

INFORMATION PERTAINING TO AIR-CONDITIONED ARTICULATED COACHES

Bus Manufacturer	AM General Corporation Machinen Fabrik Augsburg Nurnberg (MAN)
Model Number	SG 220-10255
Seating Capacity	64 Passengers
Number of Coaches	20
Date Received	March 1979
Bid Price	\$171,648.55 Per Coach
Height	124-1/8"
Width	102"
Length over Bumpers	660-5/8"
Horizontal Hinge Angle	31°
Vertical Hinge Angle	11°
Body Turning Radius	41.41
Weight	36,400 lbs.
Wheel Base	
Front Axle to Drive Axle	222-7/16"
Drive Axle to Trailer Axle	255-1/2"
Body Overhang Including Bumper	
Front	105"
Rear	77-3/8"
Wheelhousings	Stainless Steel
Stepwells	Stainless Steel

INFORMATION PERTAINING TO AIR-CONDITIONED ARTICULATED COACHES - Continued

Rear Axle (Trailer)

Manufacturer MAN A.G. West Germany

Model V7-70

Drive Axle Final Ratio 5.22.16

Engine (Coach)

Manufacturer MAN A.G. West Germany
Horizontal Six Cylinder
in Line Turbo Charged

Model D 2566 MTUM/US

Horsepower Net 280 at 2200 RPM

Diesel Fuel Capacity 100 Gal.

Alternator Delco Remy Series 50 DN

Type 600, 28V/270Amp

Air Compressors

Manufacturer MAN

Type (18.3 cu. in.) One Cylinder
Water-Cooled, 2 Compressors
Total CFM 26.8 at 2000 RPM

Power Steering

Manufacturer ZF 8065

Type Gear

Relief Pressure 1425 psi

Transmission with Two Stage Retarder

Manufacturer Renk

Model 874

Auxiliary Heater

Manufacturer Webasto

INFORMATION PERTAINING TO AIR-CONDITIONED ARTICULATED COACHES - Continued

Tires

Manufacturer	Goodyear
Type	Tube, Bias Ply
Size	Hi-Miler 12.0x22.0 G 8 Series, 55 MPH Rating

Air-Condition Drive Engine

Manufacturer	Perkins
Type	Diesel 4 Cylinder in Line 4.1254
Horsepower	SAE Net 62 3000 RPM
Constant Speed	2200 RPM

A/C Compressor

Manufacturer	Trane, Inc.
Model	GB

Refrigerant

Freon 22

Coach Capacity

37 lbs.

A/C Alternator

Manufacturer	Niehoff
Type	N 1302-1

Batteries (Main)

Coach	Mfg. Gould 12 Volt
Model	Solid Cover

Batteries A/c

Manufacturer	Delco
Type	Maintenance Free 12 Volt

Lighting Interior

Fluorescent

Manufacturer	Luminator
--------------	-----------

Ballast	Triad-Utrad
---------	-------------

Lens Material	Polycarbonate
---------------	---------------

ARTICULATED PHOTOS - SERIES 7000 - 7019

COMPONENT INDEX

EXTERIOR PHOTOS AND VARIOUS COMPONENTS AS VIEWED WITH ACCESS DOORS OPEN

PHOTO
NUMBER

- 1 Front view of coach with driver's heater access door closed
- 2 Front view with heater access door open
 - 1) Alcohol evaporator
 - 2) Driver's heater coolant return line
 - 3) Driver's heater coolant supply line
 - 4) Heater core air bleed valve
 - 5) Transmission kickdown switch assembly
 - 6) Accelerator linkage bell crank
 - 7) Service brake application valve with micro switches to actuate transmission retarder
 - 8) Power steering gear assembly
- 3 Left front corner headlight door open
 - 9) A/C hour meter
 - 10) A/C ambient temperature thermostat switch
- 4 Left headlight with resistor
 - 11) Resistor to reduce voltage from 24 volts to 12 volts
- 5 Enlarged view left side driver's heater door open Accelerator interlock cylinder (not shown) installed behind and bottom of bell crank #6
- 6 Enlarged view right side driver's heater door open
- 7 Rear view of coach A/C access door closed
- 8 Rear view A/C door open
- 9 Left side oblique view
- 10 Left side view entire coach
- 11 Left side view entire coach in left turn condition
- 12 Side view left front main electrical junction box door closed

PHOTO
NUMBER

13 Side view left front main electrical junction box door open

14 Enlarged view main electrical junction box

- 13) Transmission printed circuit control box
- 14) Turn indicator unit
- 15) Engine hot coolant warning switch
- 16) Drivers air tube from blower in heat duct to console with adjustable air outlet

Relay Identification Left to Right

- a) Turn signal
- b) Turn signal
- c) Alternator discharge warning light
- d) 12-volt radio circuit
- e) Horn
- f) Reverse lamps
- g) Turn signal indicator
- h) Interior lighting
- i) Interior lighting
- j) Coolant heater (auxiliary)
- k) Spring brake interlock
- l) Spring brake interlock
- m) Engine fast idle
- n) Passenger signal

Left Bottom Corner

- | | |
|------------------|--------------------|
| o) Fare Box | p) Driver's blower |
| q) Entrance Door | r) Public address |
| s) Radio | |

15 Left side view of battery, voltage regulator and auxiliary coolant heater compartment access doors closed

16 Left side view engine oil dip stick and filler pipe access door open

- 17) Oil filler pipe
- 18) Engine dip stick

17 Enlarged view of engine oil filler pipe and dip stick

18 Voltage regulator compartment enlargement

- 19) Battery equalizer
- 20) Voltage regulator
- 21) Webasto auxiliary coolant heater control relays and bi-metal switches

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- 18 Voltage regulator compartment enlargement - cont'd.
- 22) Engine starting motor relay
 - 23) Heater box blower motor 160 amp master circuit breaker
 - aa) 12 volt radio circuit breaker
 - bb) Coach main circuit breaker
- Relays Left to Right
- 1) Front pump
 - 2) Rear pump
 - 3) A/C
 - 4) Start internal
 - 5) Engine Stop
 - 6) Stop light
- Circuit Breakers Beneath Relays Left to right
- 1) Front pump
 - 2) Rear pump
 - 3) Engine cold start
 - 4) Engine compartment lights
 - 5) Fare box
- 19 Side view battery, voltage regulator and auxiliary heater compartment doors open
- 24) Webasto heater controls
 - 25) Combustion Chamber with water jacket
 - 26) Fuel oil filter
- 20 Enlarged view auxiliary heater
- 21 Left side bellows coach straight position
- 22 Left rear A/C unit air inlet
- 23 Right side entire view of coach
- 24 Right side oblique view
- 25 Right side bellow coach straight ahead
- 26 Right side of coach in left turn position
- 27 Left side bellows coach in right turn position
- 28 Left side coach in right turn position

PHOTO
NUMBER

- 29 Right side bellows coach in right turn position
- 30 Right side bellows coach in right turn position
- 31 Entrance doors closed
- 32 Entrance doors open
- 33 Stepwell entrance doors open
- 34 Right side view of surge tank and engine compartment doors closed
- 35 Engine compartment door open
- 36 Enlarged photo engine compartment door open
 - 27) Power Steering oil lines from reservoir
 - 28) Engine emergency shut down fuel solenoid
 - 29) Manual fuel pump
 - 30) Engine fuel filters
 - 31) Engine air intake to filters
 - 32) Engine air filters
 - 33) Engine air filter restriction indicator
- 37 Surge tank door open
- 38 Enlarged view surge tank door open
 - 34) Power steering oil reservoir
 - 35) Engine coolant filler pipe
 - 36) Engine coolant automatic pressure relief valve
- 39 Exit doors closed
- 40 Exit doors open
- 41 Exit door stepwell doors open
- 42 Right rear A/C engine air intake and A/C compressor access door closed
- 43 A/C compressor access door open
- 44 Enlarged view of A/C compressor door open right side
 - 37) Location of engine air cleaner
 - 38) A/C compressor
 - 39) A/C engine final fuel filter
 - 40) A/C compressor high head pressure switch
 - 41) Batteries for A/C

PHOTO
NUMBER

45 Enlarged view fuel tank filler pipe right side of trailer

STRUCTURE PHOTOS

46 Front suspension assembly

47 Chassis structure (partial)

48 Completed chassis structure prior to collector installation

49 Top view structure farebox and stepwell area

50 Entrance door stepwell structure

51 Farebox and stepwell

52 Side structure prior to collector installation

53 Roof structure

54 All component structures in collector for welding

55 Left front wheelhousing structure

42) Front axle brake reservoir

43) Front axle brake reservoir

44) Drive axle brake reservoir

56 Right rear tractor chassis structure

45) Leveling valve

57 Left rear tractor chassis structure

46) Leveling valve

58 Drive axle wheelhousing structure

59 Tractor body structure completed welding

47) Heater return line from trailer

48) Heater supply line to trailer

60 Left side structure view welded completely

A/C ASSEMBLY BEFORE AND AFTER INSTALLATION

- 61 Bulkhead side before installation
- 49) A/C alternator
 - 50) A/C alternator voltage regulator
 - 51) A/C engine fuel pump
 - 52) A/C refrigerant hot gas by pass valve
 - 53) Primary fuel filter
 - 54) A/C engine air filter restriction indicator
- 62 Enlarged view of Items 51-52-53
- 63 Enlarged view of Items 49-50-54 A/C engine
- 64 Enlarged view A/C alternator voltage regulator
- 65 Enlarged view of A/C compressor
- 66 A/C engine coolant and refrigerant condenser cores
- 55) Condenser core
 - 56) Coolant core
- 67 Coolant and condenser core
- 68 Air inlet side of coolant and condenser cores
- 69 A/C control electrical box
- 57) Low water engine shut down switch
 - 58) Speed sensor
 - 59) 60 second time delay
 - 60) CR2 solenoid switch
 - 61) CR3 solenoid switch
 - 62) PR2 solenoid switch
 - 63) AR1 relay
 - 64) CR1 relay
 - 65) CR4 relay
 - 66) CR5 relay
 - 67) CR6 relay
 - 68) Ten second time delay
- 70 A/C unit assembly installed and access door open
- 71 A/C unit coolant temperature, and engine oil pressure gauge
- 69) Coolant automatic pressure relief valve
 - 70) Coolant reservoir fill cap

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NUMBER

DRIVE AXLE AND SUSPENSION

- 72 Axle installed in suspension frame
- 73 Axle with brake chambers
 - 71) Air line to service brake chamber
 - 72) Park brake release air line
 - 73) Air line to service brake with air psi check
- 74 Front view drive axle
- 75 Drive axle with air valves
 - 74) Pressure protection valve
 - 75) Drive shaft U joint
 - 76) Service brake stoplight switch
- 76 Drive axle brake chambers
 - 77) Service brake chamber
 - 78) Spring applied park brake chamber
- 77 Enlarged view brake chambers and air lines
- 78 Drive axle suspension frame air spring beam
 - 79) Left side leveling valve link
 - 80) Right side leveling valve link
- 79 Right side suspension air spring, shock absorber, leveling valve and link
 - 81) Shock absorber
- 80 Left side suspension air spring, shock absorber, and leveling valve link
 - 82) Shock absorber

STEERING AXLES TRACTOR FRONT AND TRAILER

- 81 Installation lower control arms
- 82 Tractor left side front view of suspension
 - 83) Steering drag link
- 83 Tractor left side rear view of suspension
- 84 Trailer left side rear view of suspension

STEERING AXLES TRACTOR FRONT AND TRAILER - Cont'd.

- 85 Trailer left side front view of suspension
- 86 Left side trailer air suspension reservoir
- 84) Air reservoir
- 87 Trailer right side front view of suspension
- 88 Trailer right side rear view of suspension
- 85) Leveling valve
- 86) Leveling valve link
- 89 Trailer right side air suspension reservoir
- 87) Air reservoir
- 90 Tractor right side rear view of suspension
- 88) Leveling valve
- 89) Leveling valve link
- 91 Tractor right side front view of suspension
- 92 Enlarged view upper and lower control arms right side rear view
 of tractor
- 93 Enlarged view power steering unit chassis mounted
- 90) Power steering unit
- 91) Quick change coupling power steering
 pressure check point
- 92) Park brake warning light switch
- 93) Front air pressure warning indicator light
 switch
- 94) Rear air pressure warning indicator light
 switch

INTERIOR OF COACH BEING MANUFACTURED

- 94 Top view of horizontal hinge angle warning switch
- 95) Switch with ramps
- 95 Interior ceiling driver's area
- 96) Driver's light
- 96 Interior of coach before roof insulation

INTERIOR OF COACH BEING MANUFACTURED - Cont'd.

- 97 Tractor ceiling before insulation
- 98 Trailer roof with insulation and melamine ceiling panels installed
- 99 Interior of coach with ceiling panels, floor covering and seat rails installed both floor and wall
- 100 Left side tractor shock bracket, and access holes for removing air suspension nuts
- 97) Shock bracket
- 98) Access holes
- 101 Right side drive axle shock bracket
- 102 Right side tractor shock bracket, and access holes for removing air suspension nuts
- 103 Left side drive axle shock bracket
- 104 Trailer heater box left side with inlet and outlet openings
- 101) Fresh and recirculated air inlet
- 105 Access door to fuel tank fittings and valves
- 102) Fuel tank access
- 106 Location of driver's air blower behind console
- 103) Exact location with wire

TOP VIEW OF ENGINE, TRANSMISSION, HEATER BOXES AND FUEL TANK BEFORE PLYWOOD FLOOR INSTALLATION

- 107 Enlarged view front of engine and fan shroud
- 104) Belt driven air compressor
- 105) Belt tension adjusting idler pulley
- 106) Engine coolant fan
- 107) Radiator and fan shroud
- 108 Top view of air compressors and piping
- 108) Gear driven air compressor
- 00) Power steering pump

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TOP VIEW OF ENGINE, TRANSMISSION, HEATER BOXES AND
FUEL TANK BEFORE FLOOR COVERING - Cont'd.

- 109 Top rear view of engine
- 109) Engine crankcase breather
 - 110) Engine oil pressure, coolant temperature gauge
and compartment light switch
 - 111) Engine shutdown cylinder
 - 112) Final engine fuel filter
 - 113) Engine fuel injection pump
 - 114) Fuel lines to engine cold start plugs
- 110 A/C refrigerant flex line routing over turbo charger both
pressure and suction, to tractor evaporators
- 115) Lines pressure and suction
- 111 Front to rear view of engine assembly
- 112 Rear to front view of transmission and engine assembly
- 116) Transmission breather and fill cap
 - 117) Transmission oil dip stick to check level
- 113 Top view transmission
- 118) Transmission oil filter
- 114 Heater box installation left side trailer
- 115 Top and side view heater box with electrical connections for
blower motor
- 116 Fuel tank
- 117 Fuel lines at trailer bulkhead for A/C engine
- 119) Fuel supply line shut off valve
 - 120) Fuel return line shut off valve
- 118 Muffler location
- 121) Muffler heat baffle
- 119 Heater lines and radiator fan shroud
- 120 Top view engine coolant auxiliary heater
- 121 Heater box right side trailer

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TOP VIEW OF ENGINE, TRANSMISSION, HEATER BOXES AND
FUEL TANK - Cont'd.

- 122 Refrigerant lines and trailer steering axle drag link
- 122) Drag link (trailer)
 - 123) A/C suction line
 - 124) A/C pressure line
 - 125) Cover trailer modulating valve
- 123 Refrigerant suction and pressure line routing in tractor just before engine compartment
- 124 Air lines in tractor and rear axle suspension frame wishbone
- 125 Air reservoirs left side tractor and driver's heater lines
- 126 Air reservoirs right side of tractor and valves
- 126) Tractor front axle brake load proportioning valve
 - 127) Pressure protection valve
 - 128) Automatic moisture ejecting valve
 - 129) Four circuit protection valve
 - 130) Check valve one way
 - 131) Supply air reservoir 143 psi
 - 132) Accessory reservoir
 - 133) Drive axle brakes

UNDER CARRIAGE VIEW OF AIR RESERVOIRS AND VALVES

- 127 Drive axle suspension frame wishbone and tractor jacking pads
- 134) Hinge angle brake switch
 - 135) Pressure limiting valve
 - 136) Wishbone
- 128 Tractor water modulating valve
- 137) Modulating valve
- 129 Blower motor speed control regulator
- 138) Pressure regulator
- 130 Heater box cage fan

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UNDER CARRIAGE VIEW OF AIR RESERVOIRS AND VALVES - Cont'd.

- 131 Trailer air reservoir
- 139) Trailer axle brake load proportioning valve
140) Brake air reservoir
141) Trailer suspension air reservoir
142) Accessory air reservoir
- 132 Trailer heater box and marine pump
- 143) Marine pump motor
144) Bottom of heater box
145) Heater box blower motor
- 133 Trailer water modulating valve
- 146) Modulating valve
147) Fuel tank
- 134 Trailer steering axle reversing lever
- 148) Reversing lever
- 135 Heater box with all lines connected
- 149) Heater lines supply and return
150) A/C refrigerant lines suction and pressure
- 136 Turntable area
- 151) Cable with turn buckle for securing bellows to
 coach and trailer
- 137 Supply air reservoir
- 152) Manual drain valve
- 138 Structure in fuel tank area
- 139 Air compressor unloader valve
- 153) Muffler location
154) Unloader valve, 143 psi
- 140 Enlarged view hinge angle brake switch incorporating stoplight
 switch
- 155) Stoplight switch

UNDER CARRIAGE VIEW OF AIR RESERVOIRS & VALVES - Cont'd.

- 141 Brake valves at rear axle
- 156) Quick release relay valve right side
 - 157) Quick release relay valve left side
 - 158) Trailer brake control valve
 - 159) Drive axle brake load proportioning valve
- 142 Tractor right side air reservoir front view
- 160) Reusable air filter in housing
 - 161) Pressure charging valve (adjustable)
- 143 Tractor right side air reservoirs rear view

TURNTABLE AREA

- 144 Attaching table to trailer
- 145 Horizontal hinge angle switches installed
- 146 Attaching table to tractor
- 147 Top view with linkage
- 162) Rod assembly locating
 - 163) Arm locating
- 148 Turntable top view hinge angle switches installed
- 164) Warning and brake application ramps
 - 165) Warning switch
 - 166) Brake application switch
 - 167) Ball joint assembly carrier
- 149 Turntable top view trailer to tractor
- 150 Electrical junction box for electrical connections
- 168) Junction box
- 151 Left side view of engine
- 169) Battery box
 - 170) Voltage regulator compartment
- 152 Radiator with air baffles attached to shroud

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UNDER CARRIAGE VIEW ENGINE, EXHAUST SYSTEM AND
TRANSMISSION

- 153 Enlarged view left front engine
- 171) Alternator
172) 105° temperature switch
- 154 Rear view transmission bottom
- 173) Right angle speedometer cable drive
174) Transmission oil heat exchanger
175) Transmission
- 155 Enlarged view bottom right side of engine
- 176) Oil pressure gauge switch
177) Starter protection oil switch
178) Engine turbo charger
179) Engine oil heater exchanger
180) Engine starting motor
- 156 Engine exhaust muffler
- 181) Muffler
182) Tailpipe
- 157 Left side view transmission
- 183) Air compressor unloader valve muffler
- 158 Flex exhaust pipe right side of engine
- 184) Service brake stoplight switch
- 159 Engine turbo charger rear view
- 185) Engine cold start plugs
- 160 Enlarged view engine oil heat exchanger, starter, oil protection
 switch and oil pressure gauge switch
- 161 Switches in coolant pipe right front side of engine
- 186) Coolant temperature gauge switch
187) Radiator coolant fan control switch
188) Coolant overheat warning switch
189) Engine thermostat
190) Engine compartment light
191) Engine oil filter

PHOTO
NUMBER

UNDER CARRIAGE VIEW ENGINE, EXHAUST SYSTEM
AND TRANSMISSION - Cont'd.

- 162 Left front and side view of engine
- 163 Articulation bellows laced

INTERIOR VIEWS COMPLETED COACH

- 164 Recirculated air inlet right side trailer
 - 192) Grad-u-stat
- 165 Turntable front to rear
- 166 Turntable rear to front
- 167 Ceiling P.A. speakers
- 168 Seating rear to front
- 169 Rear route sign in trailer
 - 193) Sign curtain control motor
 - 194) Switch for sign motor
- 170 Seating front to rear
- 171 Settee seat trailer
- 172 Settee seat raised for A/C unit access
- 173 Enlarged view emergency escape hatch in roof
- 174 Emergency escape hatch open
- 175 Five position roof ventilating hatch closed
- 176 Ventilating hatch in one of open positions
- 177 Shock cover and air suspension nut removal in heat duct
 - 195) Suspension nut under cover
 - 196) Shock bracket cover
- 178 Left rear suspension nut access cover in heat duct installed

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INTERIOR VIEWS COMPLETED COACH - Cont'd.

- 179 Right rear suspension nut access cover installed
- 180 Seat installation in turntable area
- 181 Cross seat pedestals left side front to rear
- 182 Seat mounting on wheelhousing
- 183 Enlarged view seat mounting on wall track
- 184 Number one cross seat tractor right side rear view
- 185 Number one cross seat tractor right side front view
- 186 Seat mounted on water box which covers surge tank and power steering oil reservoir
- 187 Right front of coach interior with rear view mirror front stepwell convex mirror and mirror to view exit door stepwell mirror
- 188 Drivers rear view mirror, front destination sign door closed, with stop request sign, and air vents open
- 189 Front destination sign door open
 - 197) Curtain sign motor
- 190 Left side view front destination sign door open
 - 198) Voice page speaker
- 191 Right side front destination sign door open
 - 199) Door master switch
- 192 Side destination sign
 - 200) Passenger chime signal switch
- 193 Right side entrance door operating equipment compartment
- 194 Entrance compartment door open
 - 201) Stepwell and curb light
 - 202) Mag door control valve
 - 203) Stepwell and curb lights
 - 204) Door operating cylinder
 - 205) Emergency door opening air release valve

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INTERIOR VIEWS COMPLETED COACH - Cont'd.

- 195 Exit door stepwell mirror
- 206) Passenger chime
- 196 Exit door cam switch one for each door leaf
- 207) Cam switch
- 197 Exit door operating equipment compartment door closed
- 208) Passenger signal light indicating doors unlocked
- 198 Exit door switch identification
- 209) Forward door operating cylinder
- 210) Sensitive edge pressure switch
- 211) Sensitive edge switch
- 212) Stepwell and curb light switch
- 213) Mag valve
- 214) Stepwell and curb light switch
- 215) Aft door operating cylinder
- 216) By-pass relay
- 217) Door opening hold relay
- 218) Touch bar relay
- 219) Sensitive edge alarm relay
- 220) Alarm cut-out relay
- 221) Sensitive edge relay
- 222) Door fully open relay
- 223) Door fully open relay
- 224) Emergency door opening release valve
- 199 Rear stepwell
- 200 Exit door forward barrier
- 201 Entrance door stepwell
- 202 Entrance door stepwell and farebox mounting area
- 203 Entrance door stepwell, driver's heater control and route number sign assembly
- 204 Enlarged view of route number sign assembly
- 205 Enlarged view route number sign in position to set
- 206 Driver's ceiling area with driver's light
- 207 Enlarged view driver's heater control levers

INTERIOR VIEWS COMPLETED COACH - Cont'd.

- 208 Enlarged view of brake and accelerator pedals
- 225) Park brake emergency release valve
- 209 Enlarged view of driver's console
- 226) Silent alarm switch
- 227) Entrance door dump air valve
- 228) Fire extinguisher bracket
- 229) Exit door sensitive edge alarm buzzer
- 230) Turn indicator switch
- 210 Fire extinguisher installed
- 211 Top view of driver's console
- 231) Engine emergency shutdown switch
- 232) A/C engine start switch
- 233) Driver's ceiling light switch
- 234) Interior light switch
- 235) Passenger stop signal switch
- 236) Engine fast idle switch
- 237) Exit door open by-pass switch
- 238) Entrance and exit door leaf control switch
- 239) Auxiliary heater indicator light
- 240) Warning buzzer for engine oil pressure, low
air pressure, engine overheat and hinge angle
- 241) Park brake release valve
- 242) Driver's adjustable air flow ball
- 243) Entrance and exit door control valve
- 212 Partial view instrument panel
- 213 Full view driver's area including headlight dimmer switch and
speedometer cable
- 244) Adjustable air flow heat duct
- 245) Head lamp dimmer switch
- 246) Speedometer cable
- 214 Enlarged view instrument panel
- 215 Top view park brake emergency release valve location
- 216 Radio box closed
- 217 Radio box open with radio equipment installed
- 218 Radio head behind and above driver left side

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INTERIOR VIEWS COMPLETED COACH - Cont'd.

- 219 Trailer left side recirculated air inlet
- 220 Louvered HVAC air outlet left side trailer
- 221 Turntable seat left side with coach in left turn condition
- 222 Bellows top and side views right side of coach in left turn condition
- 223 Back of driver's barrier
- 224 Emergency opening instructions for side sash
- 225 Emergency opening lock handle in open position
- 226 Driver's air blower installation location behind driver's barrier in heat duct
- 227 Driver's air blower assembly location with duct in place

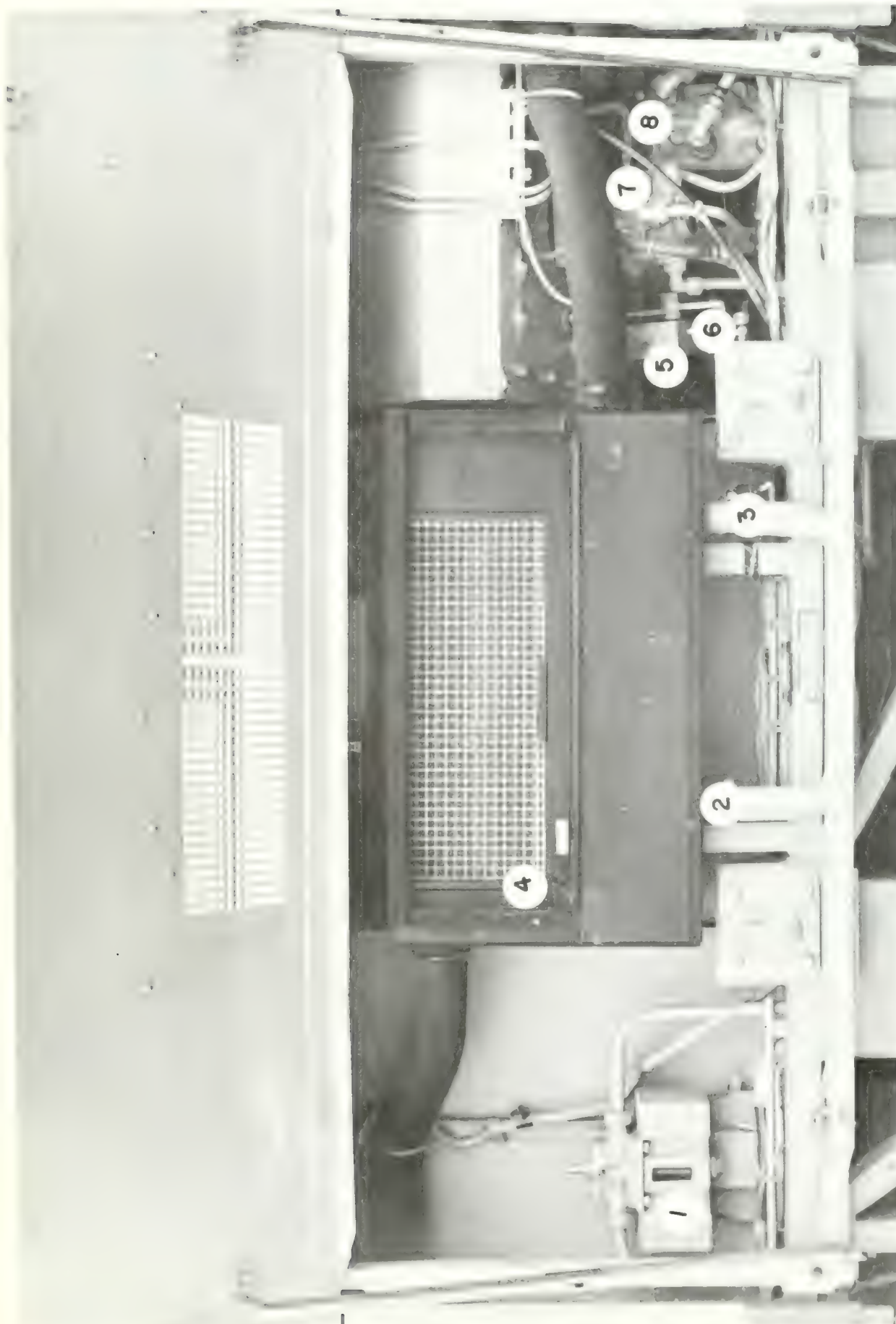
South Terminal

1979

Chicago Transit Authority

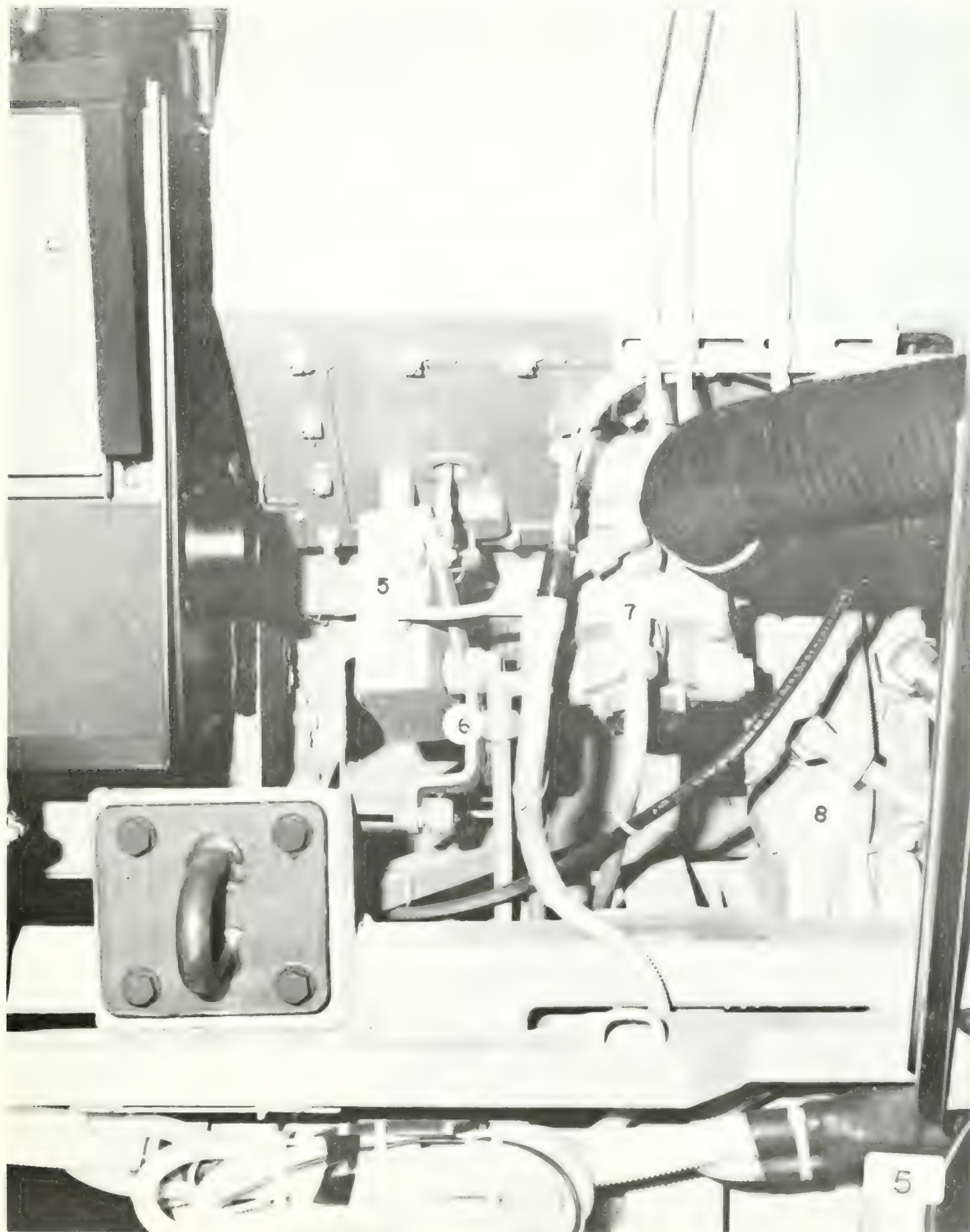
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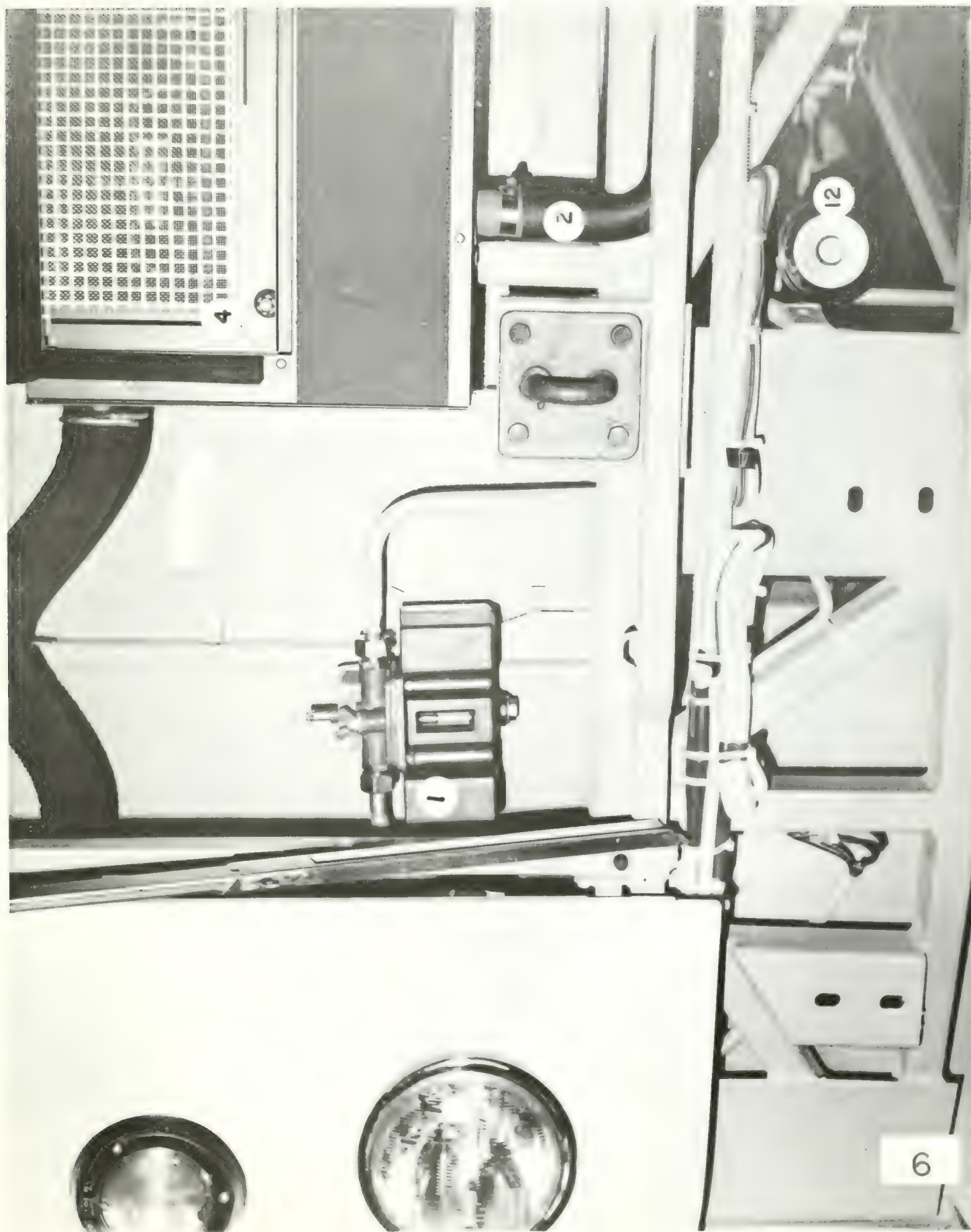
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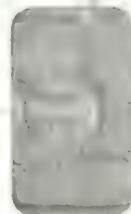
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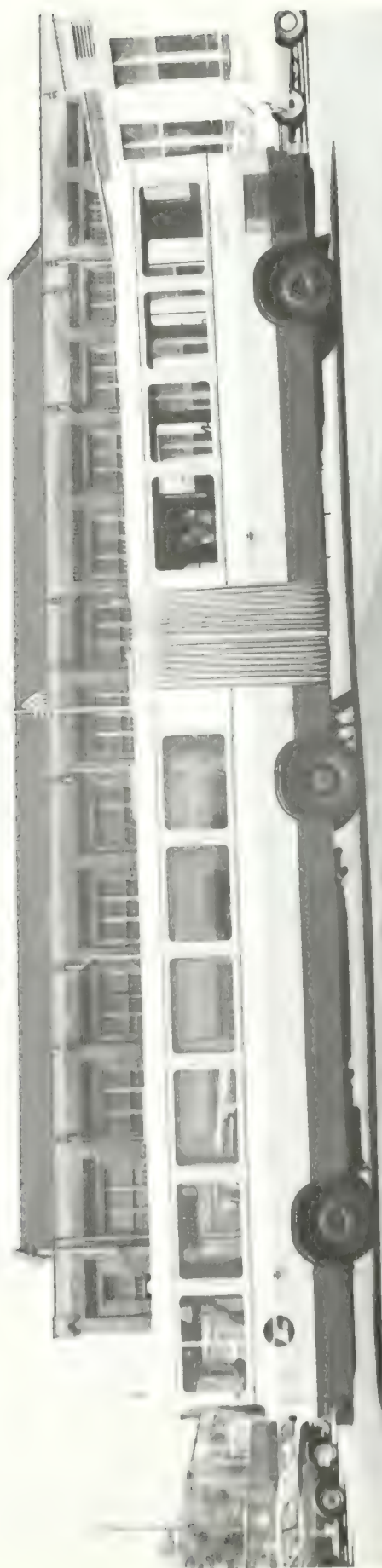
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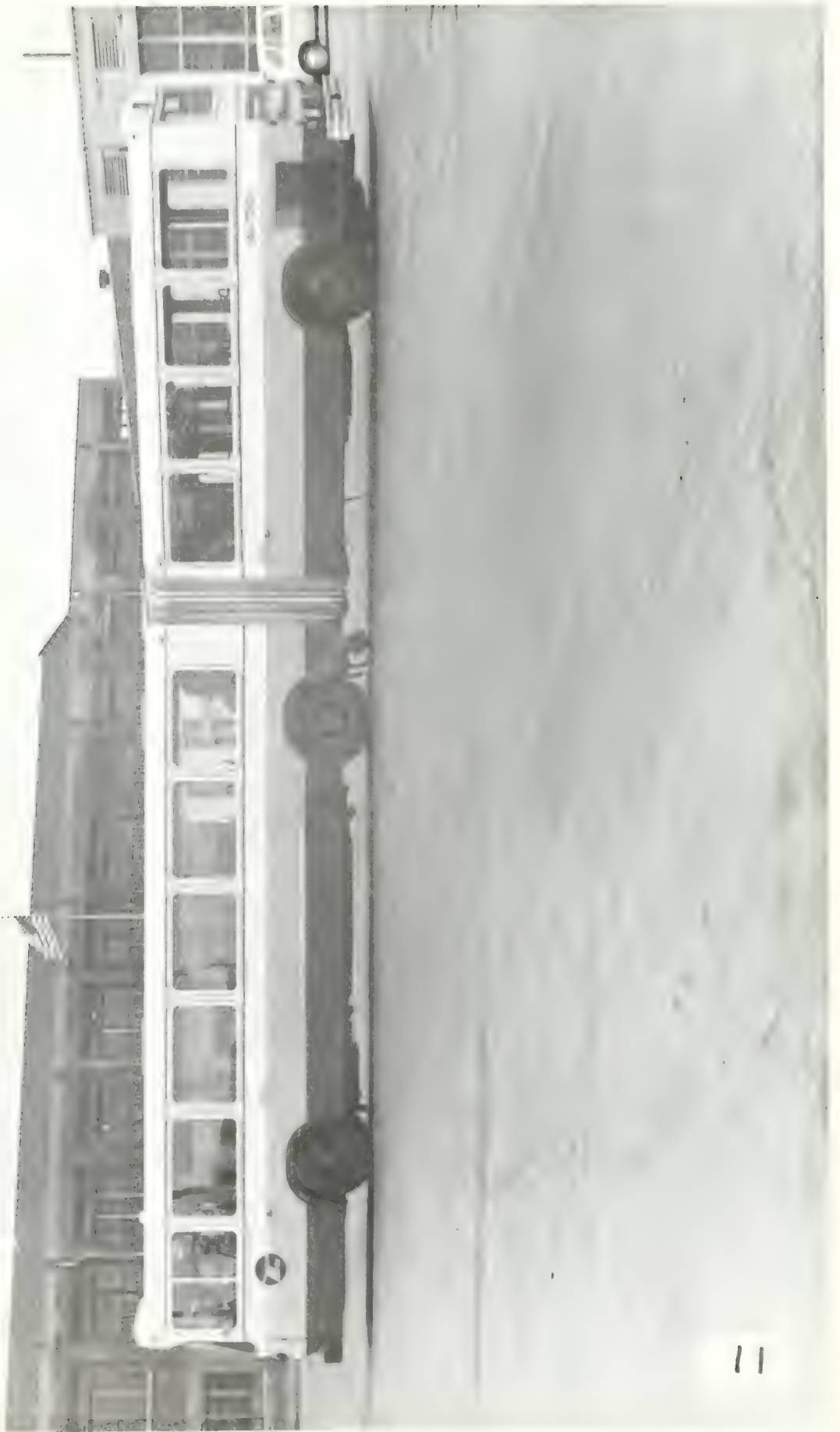
Every Sunday and Holiday
RTA/CTA **Culture buses**
Three routes from Art Institute

M 15 478

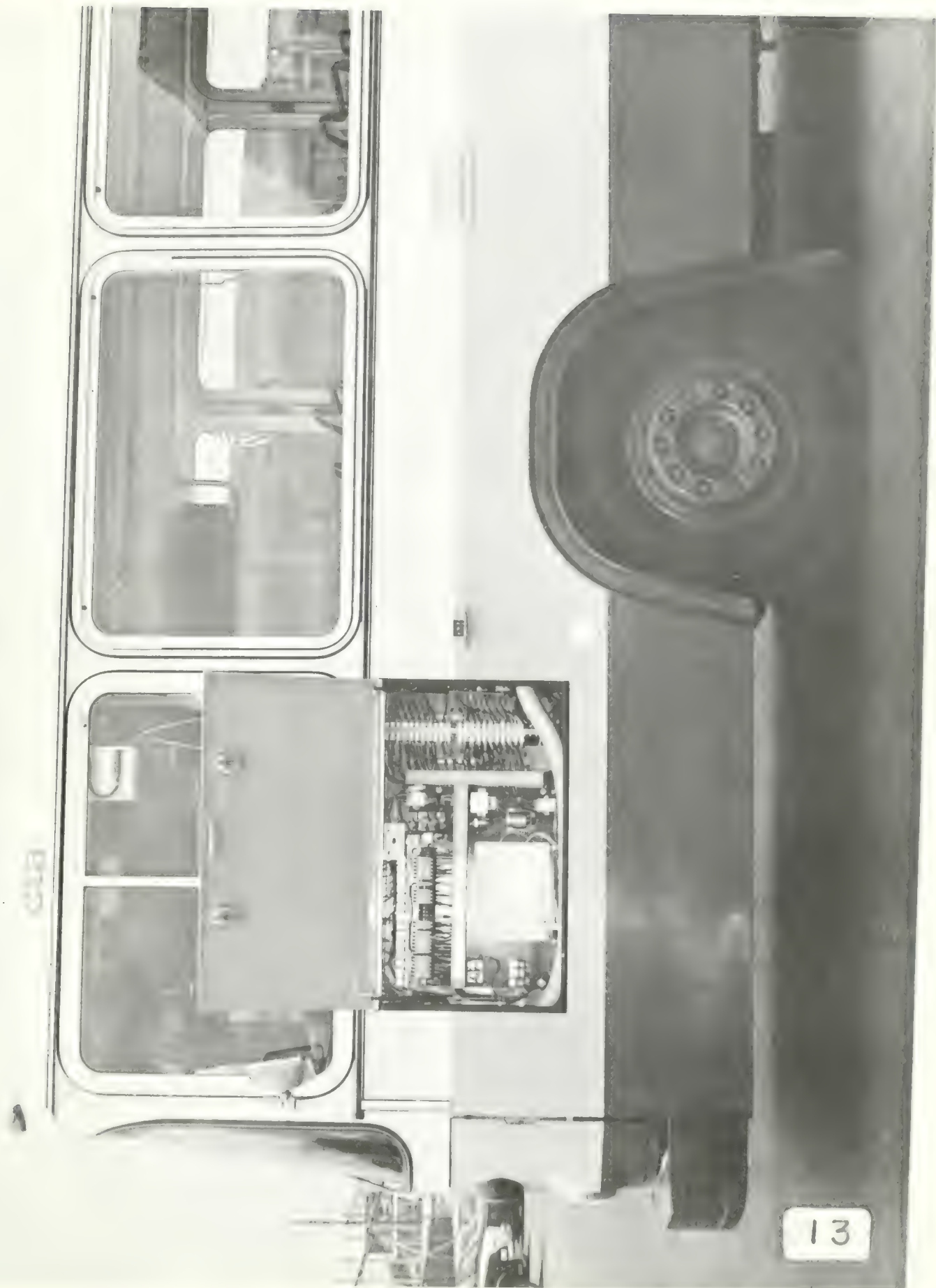


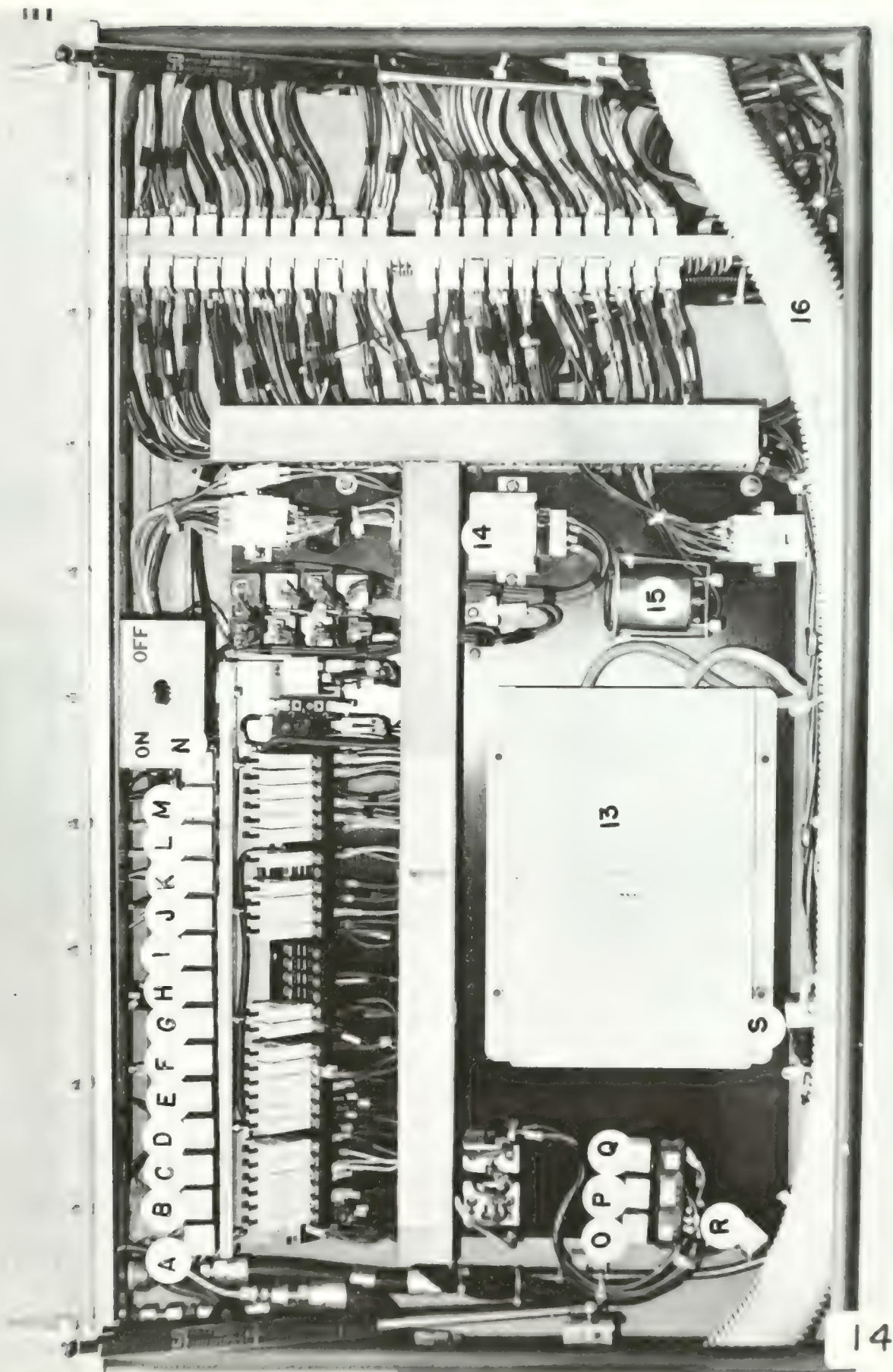


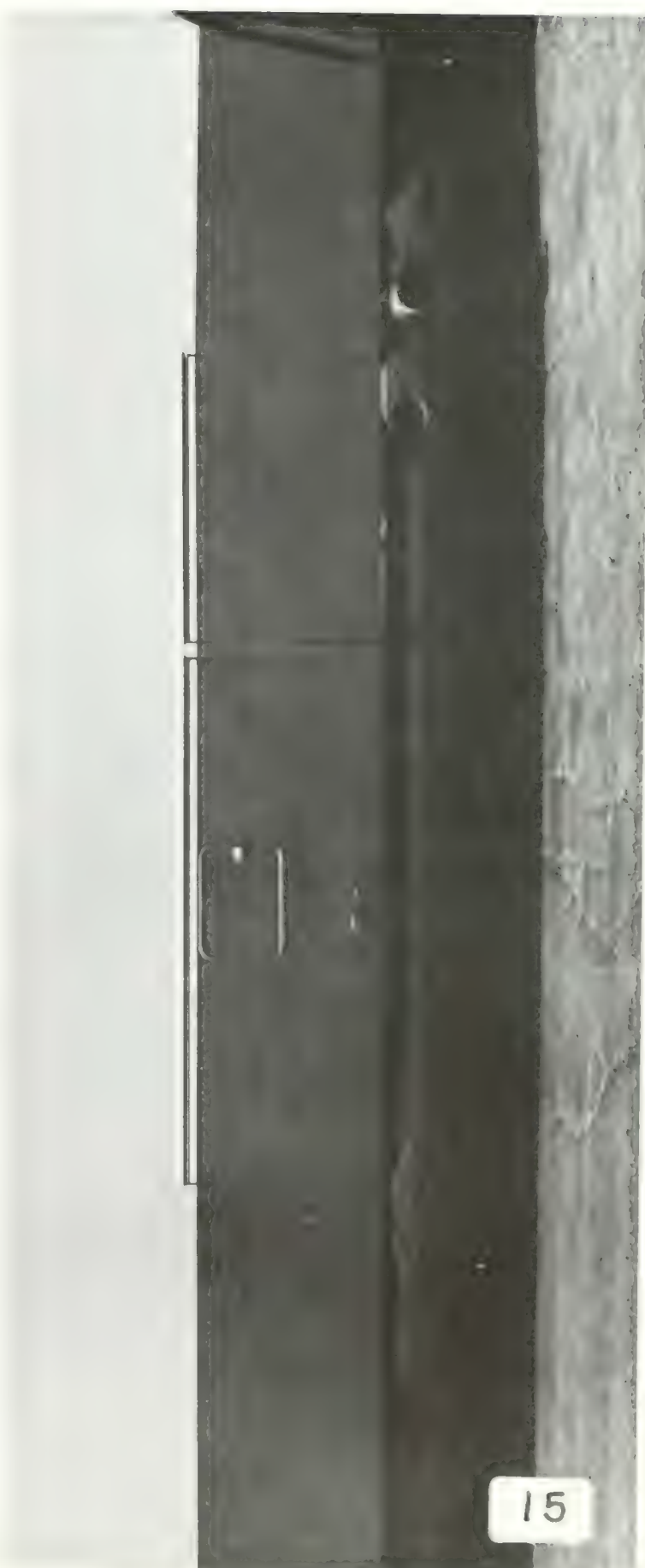
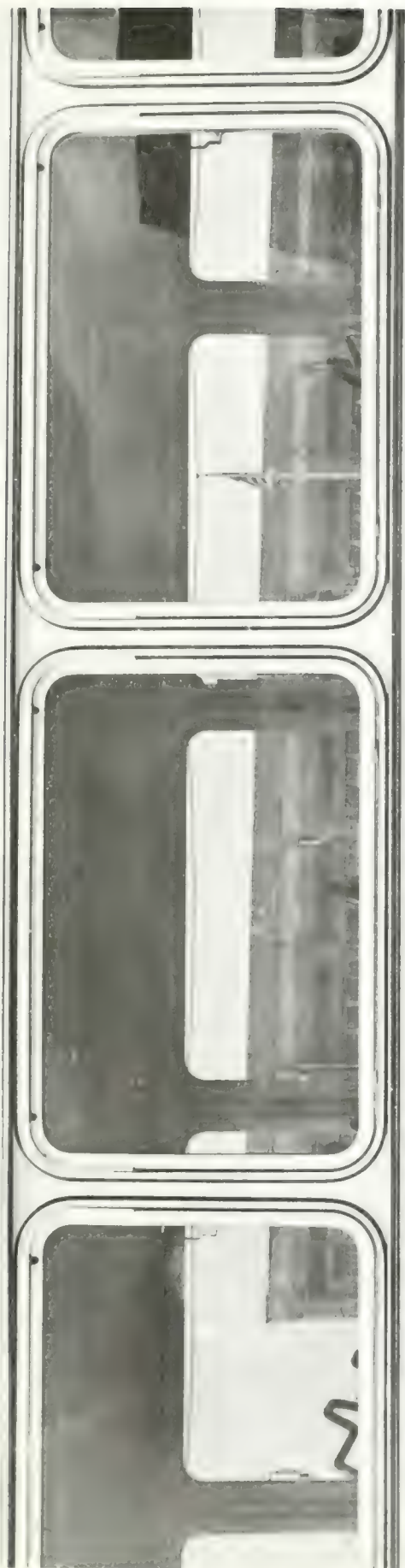


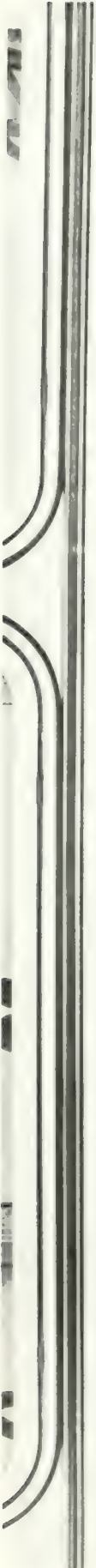




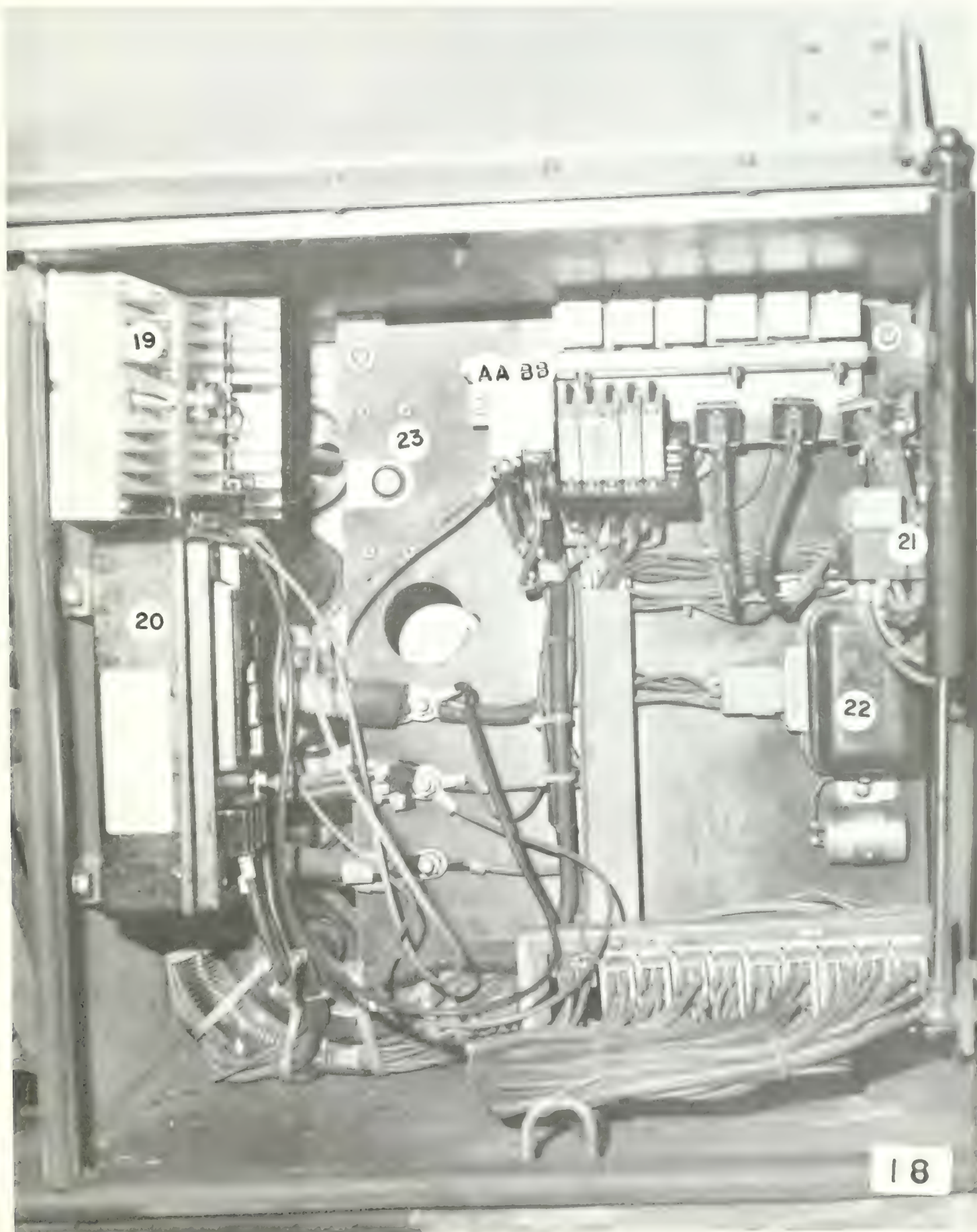




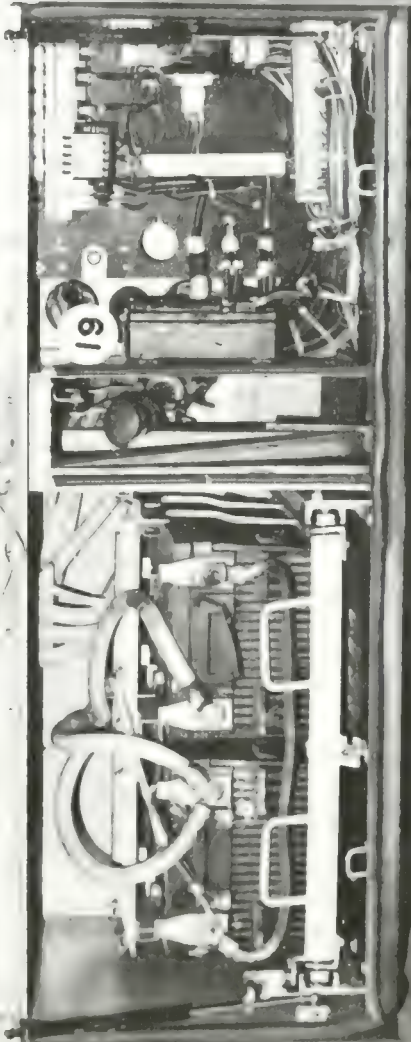
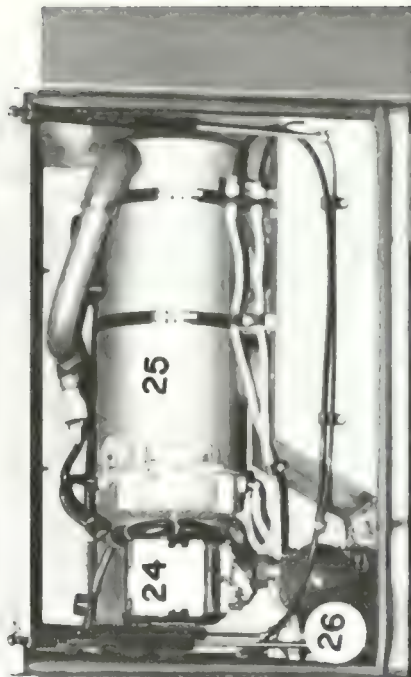


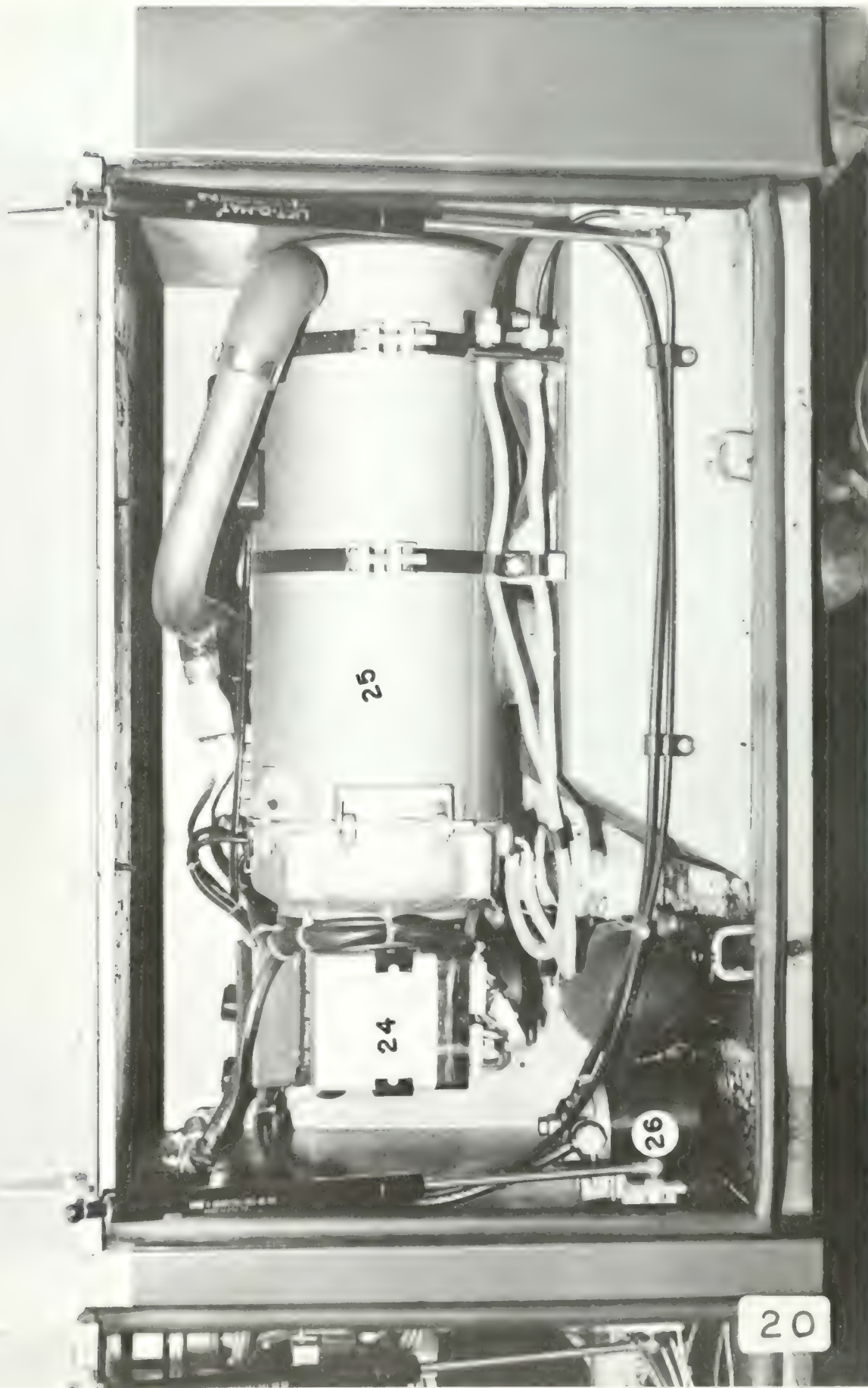




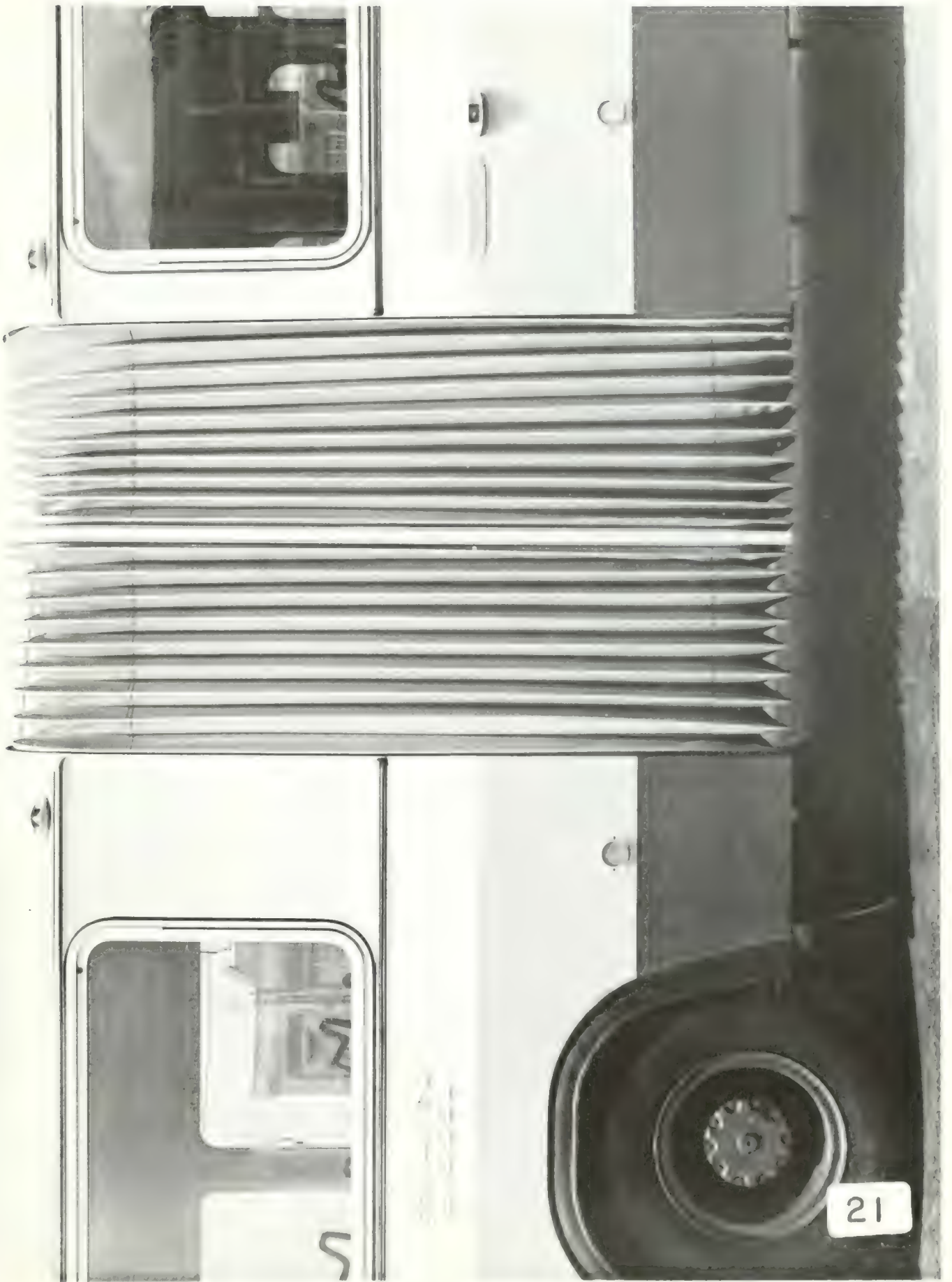


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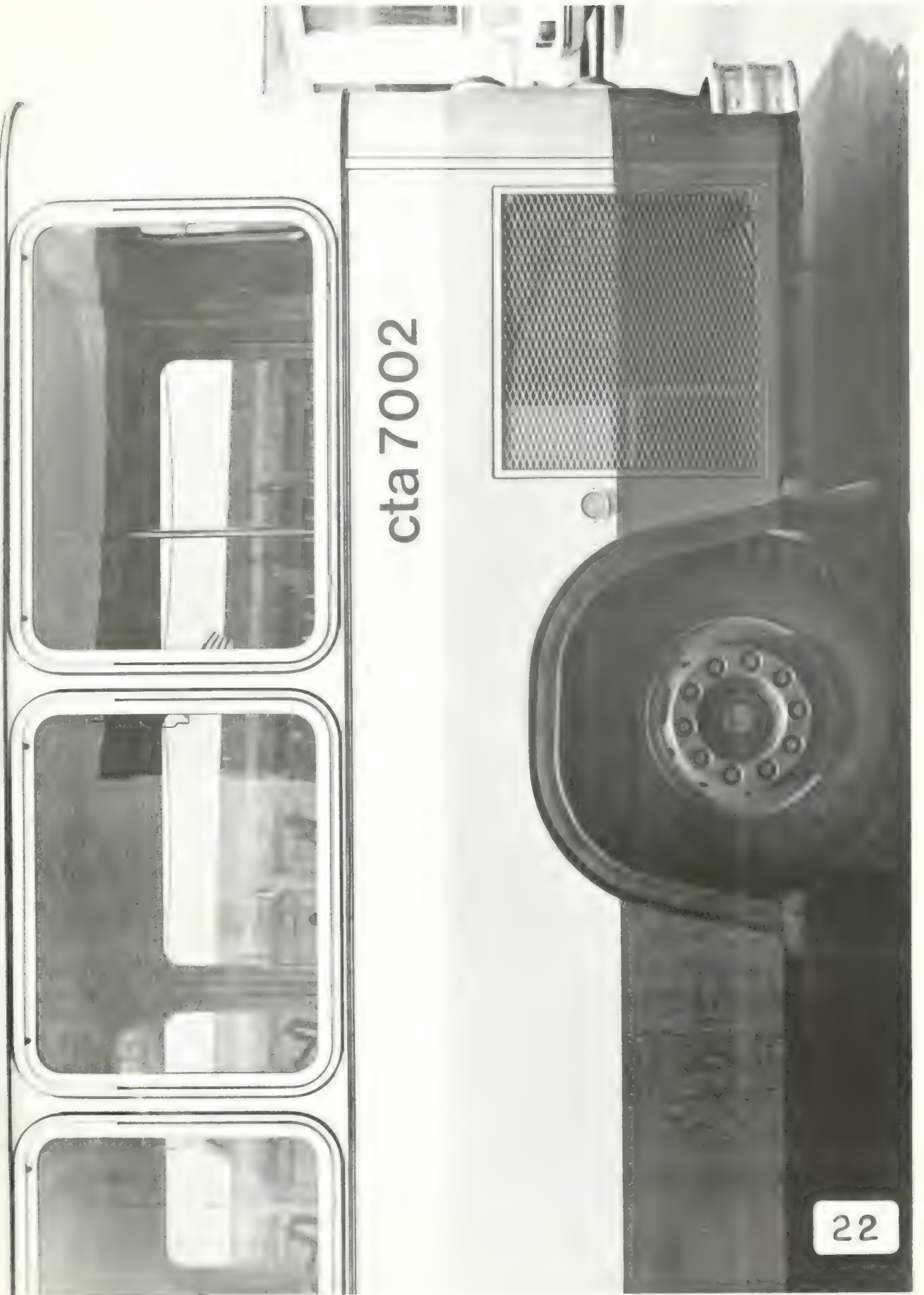




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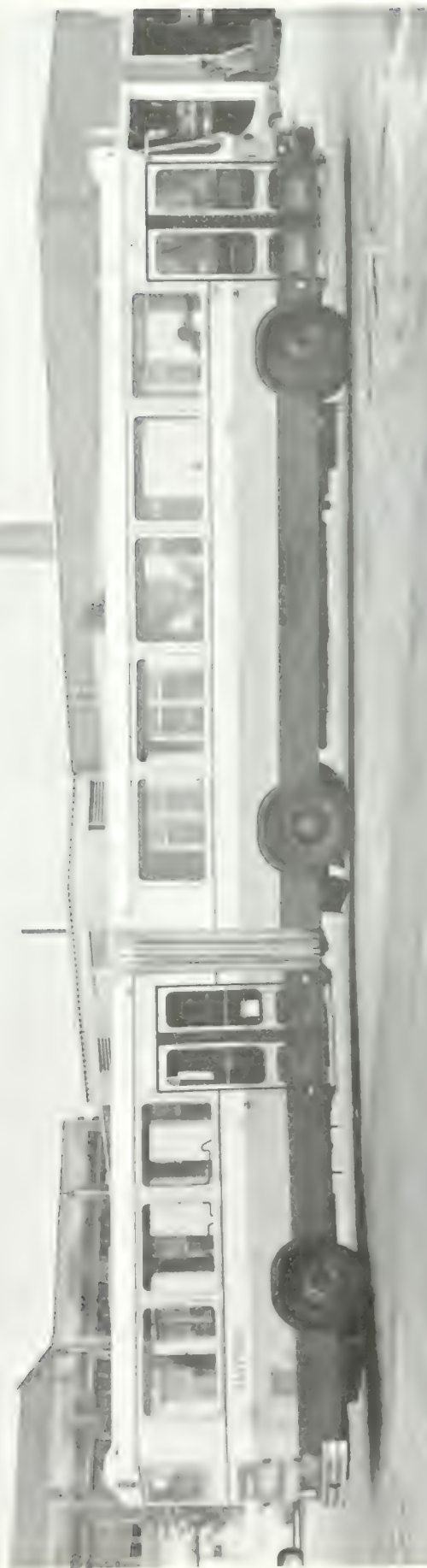















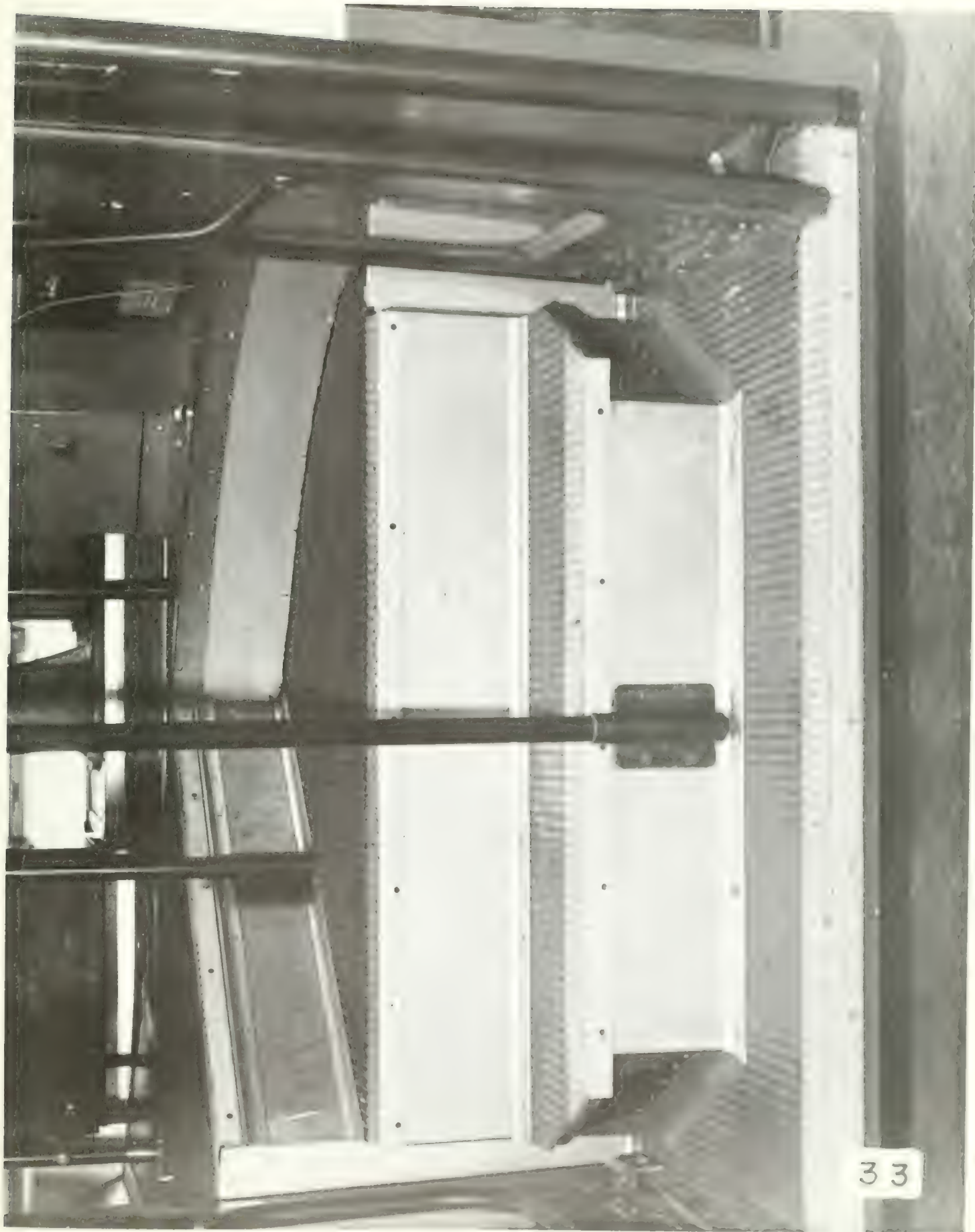


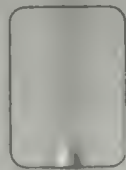


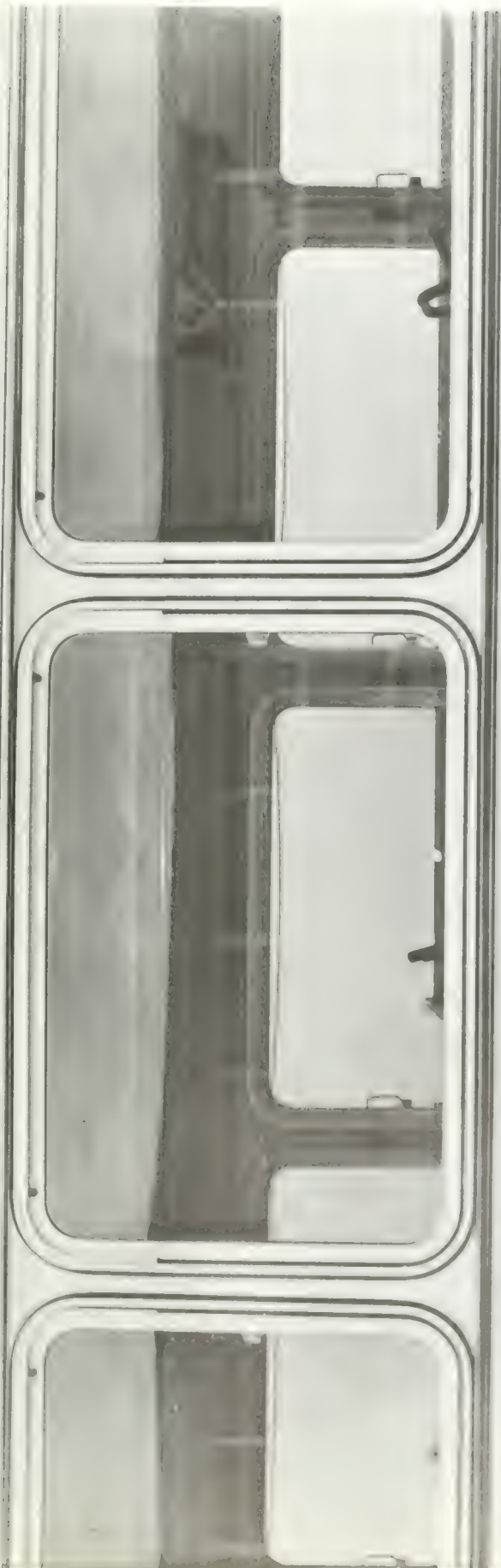
Chicago Transit Authority

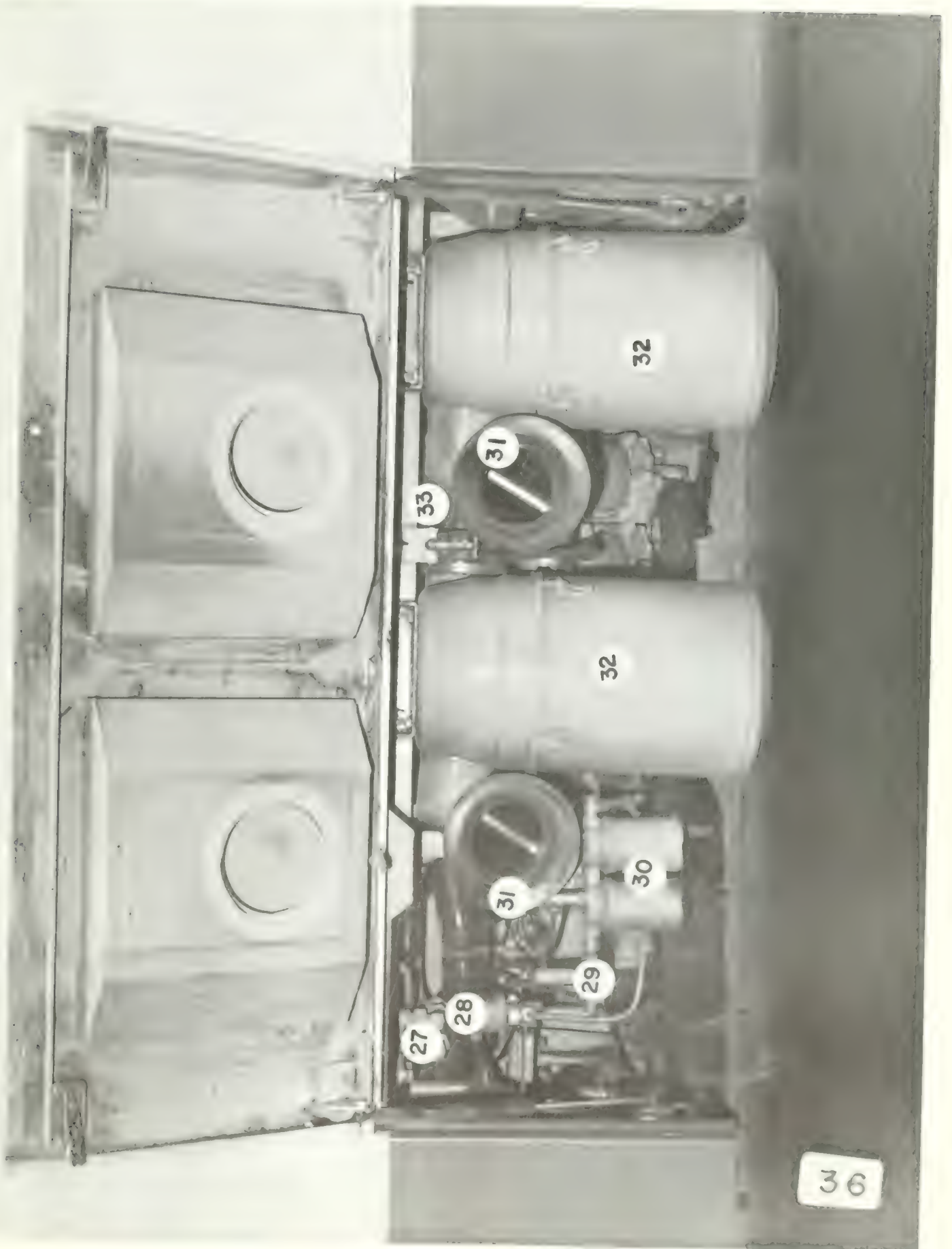
Exact fare
required
Driver has
NO change

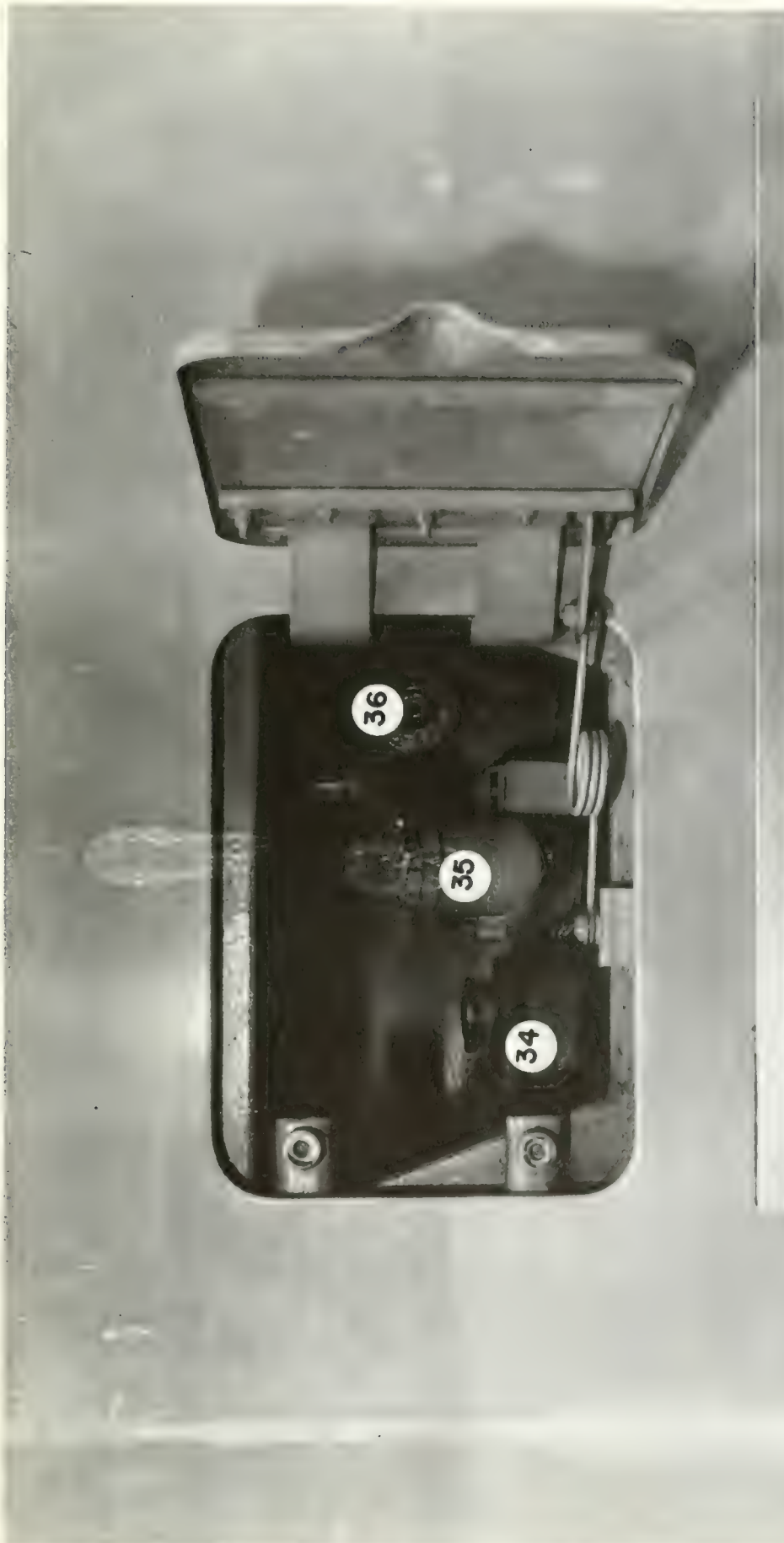


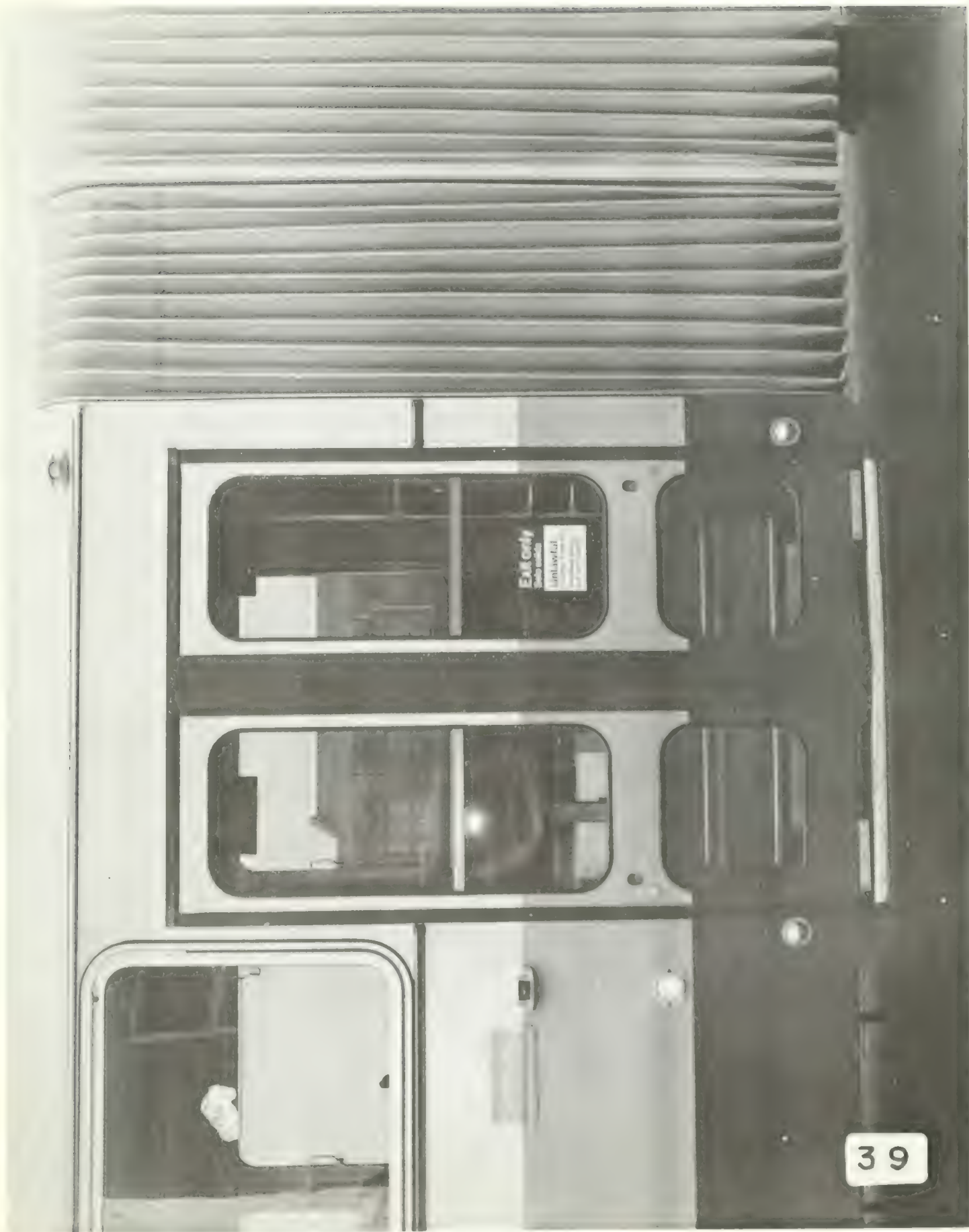


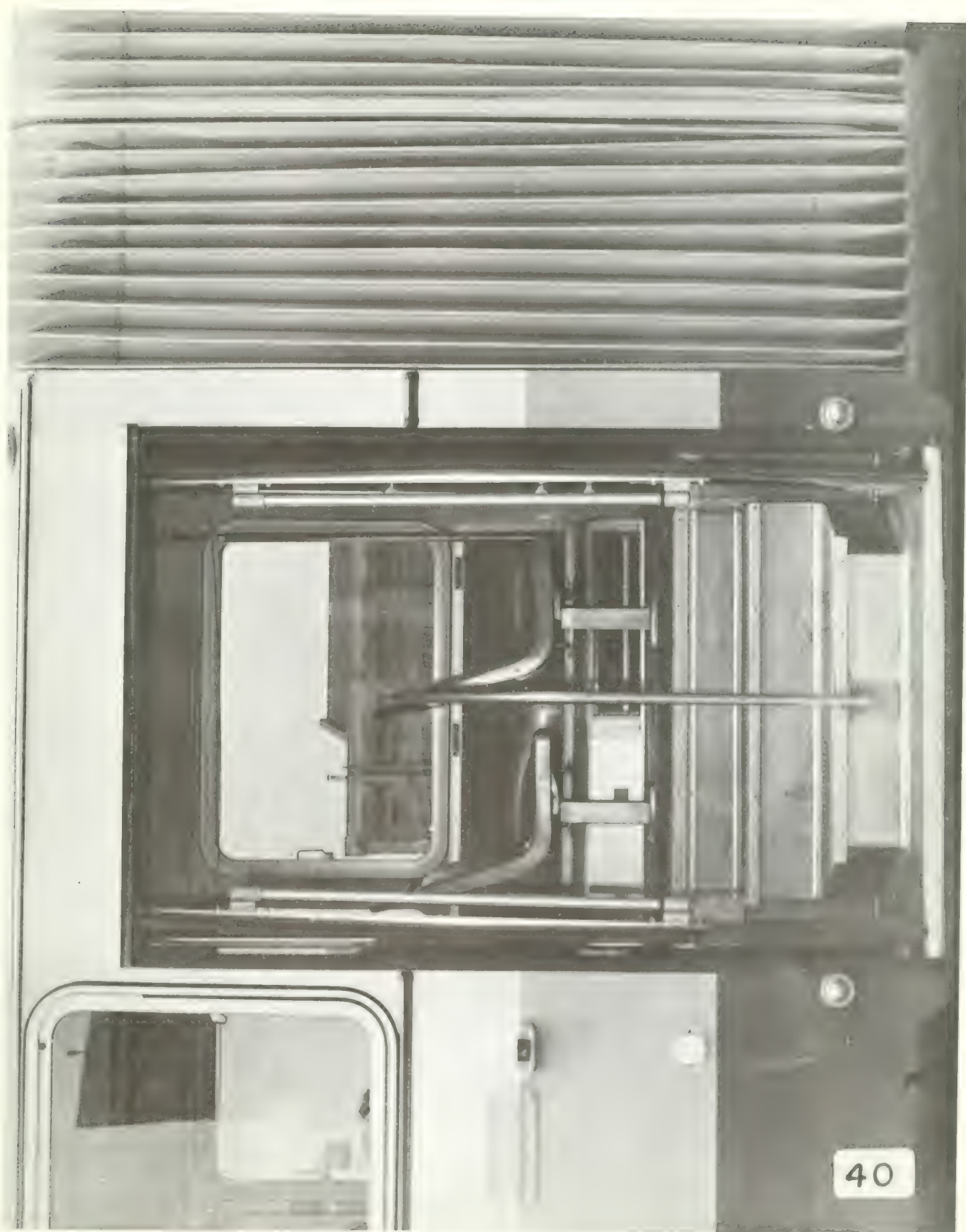


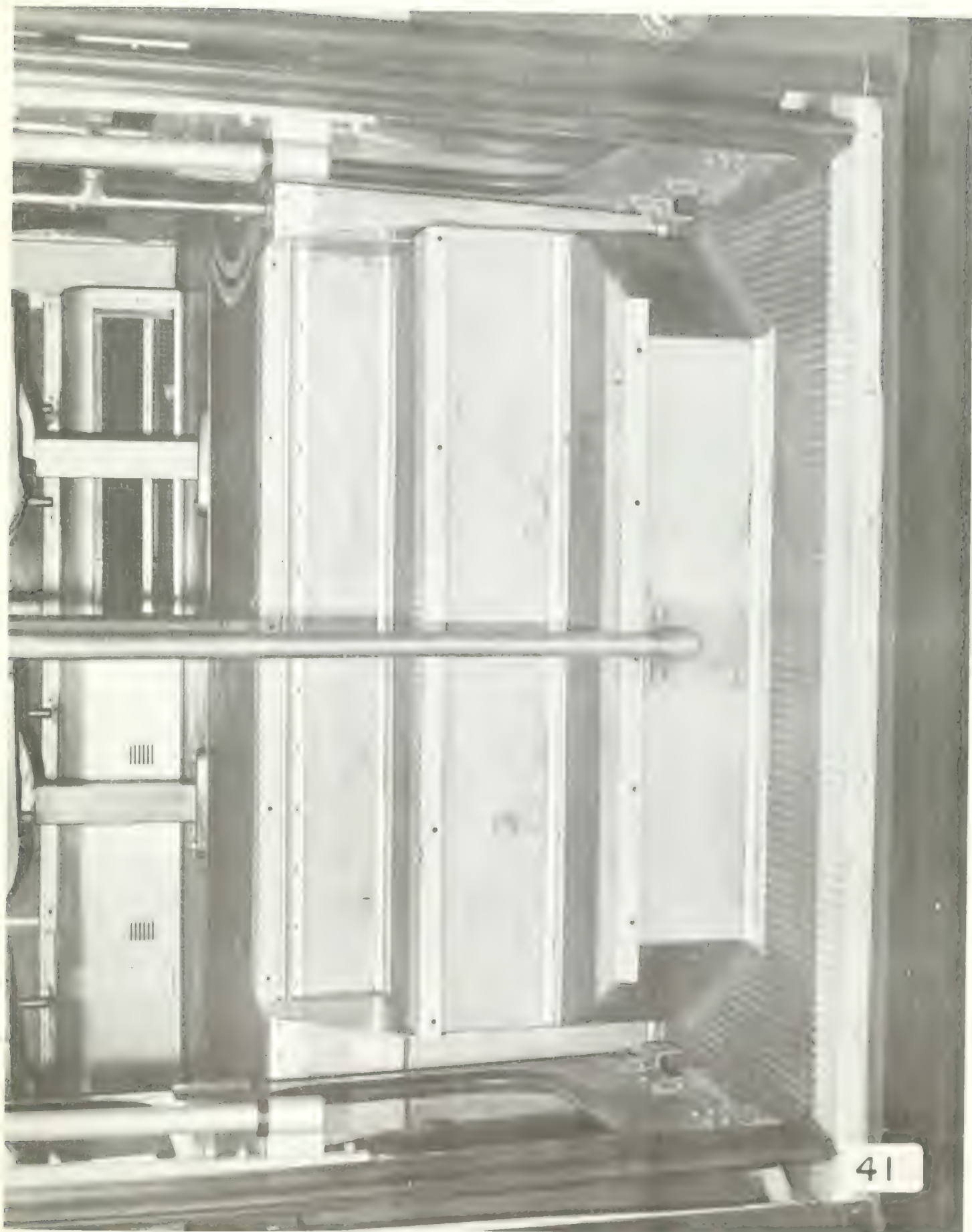




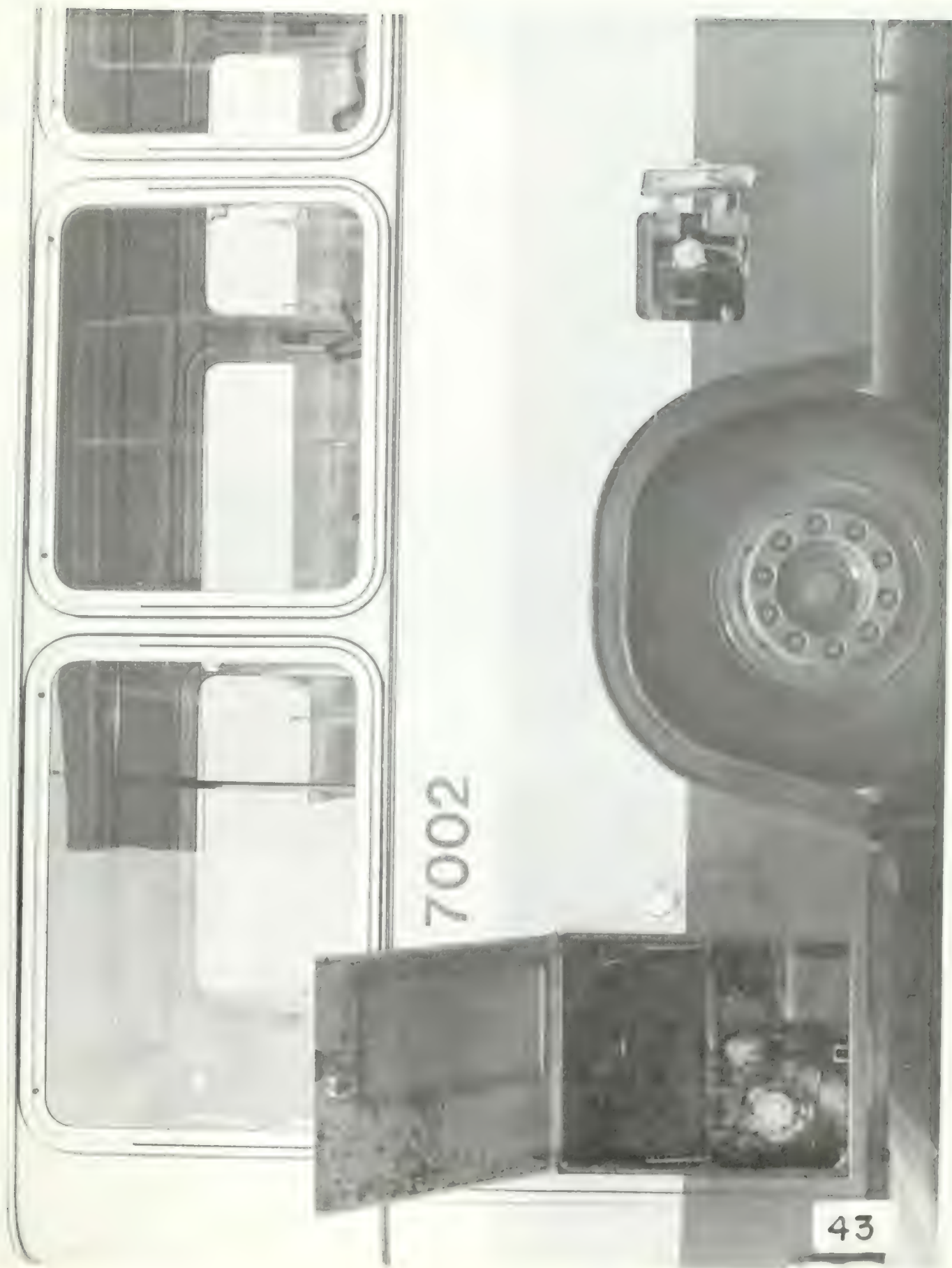




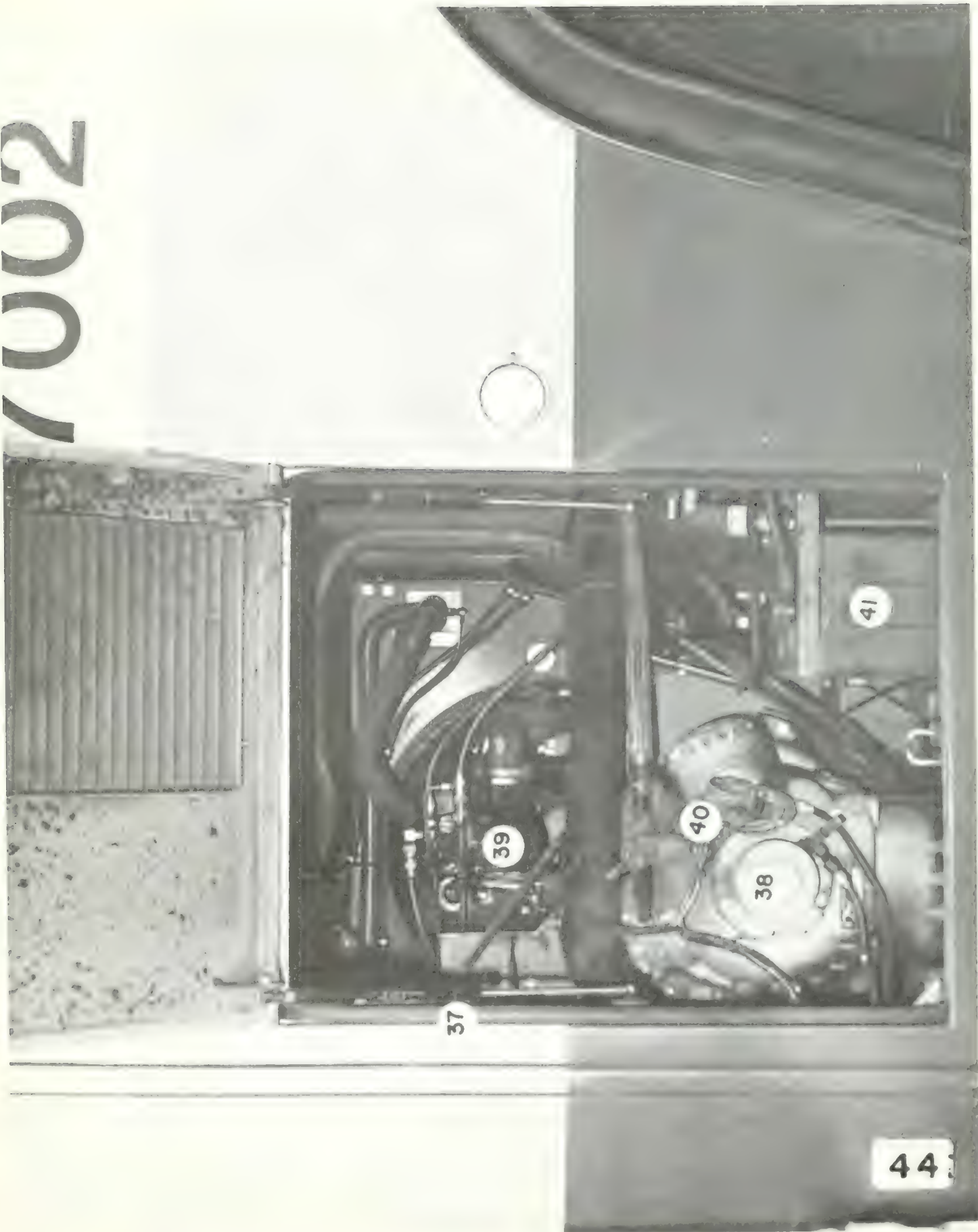




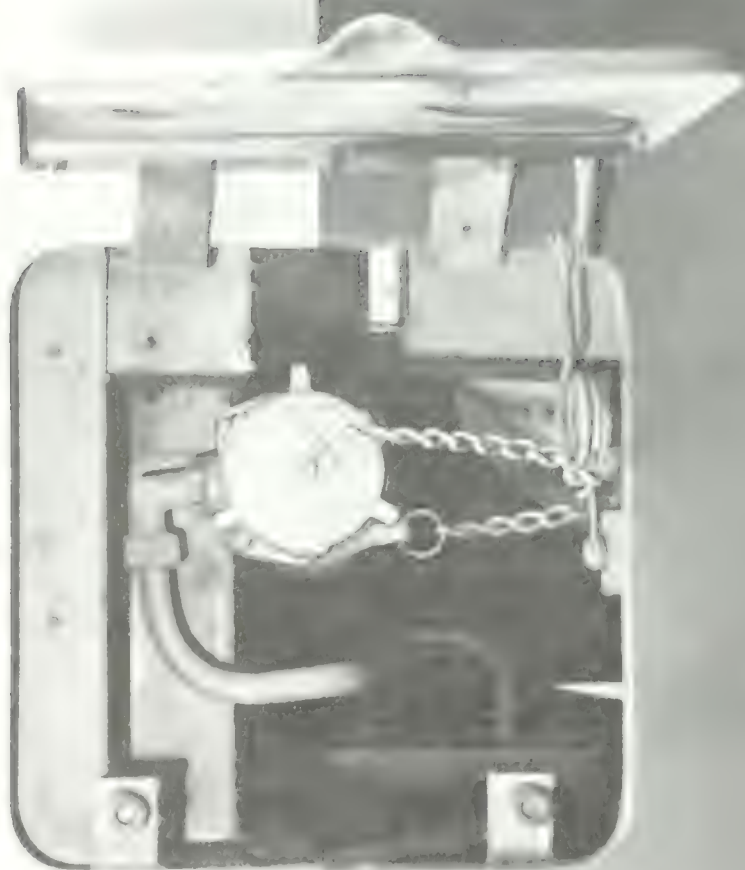
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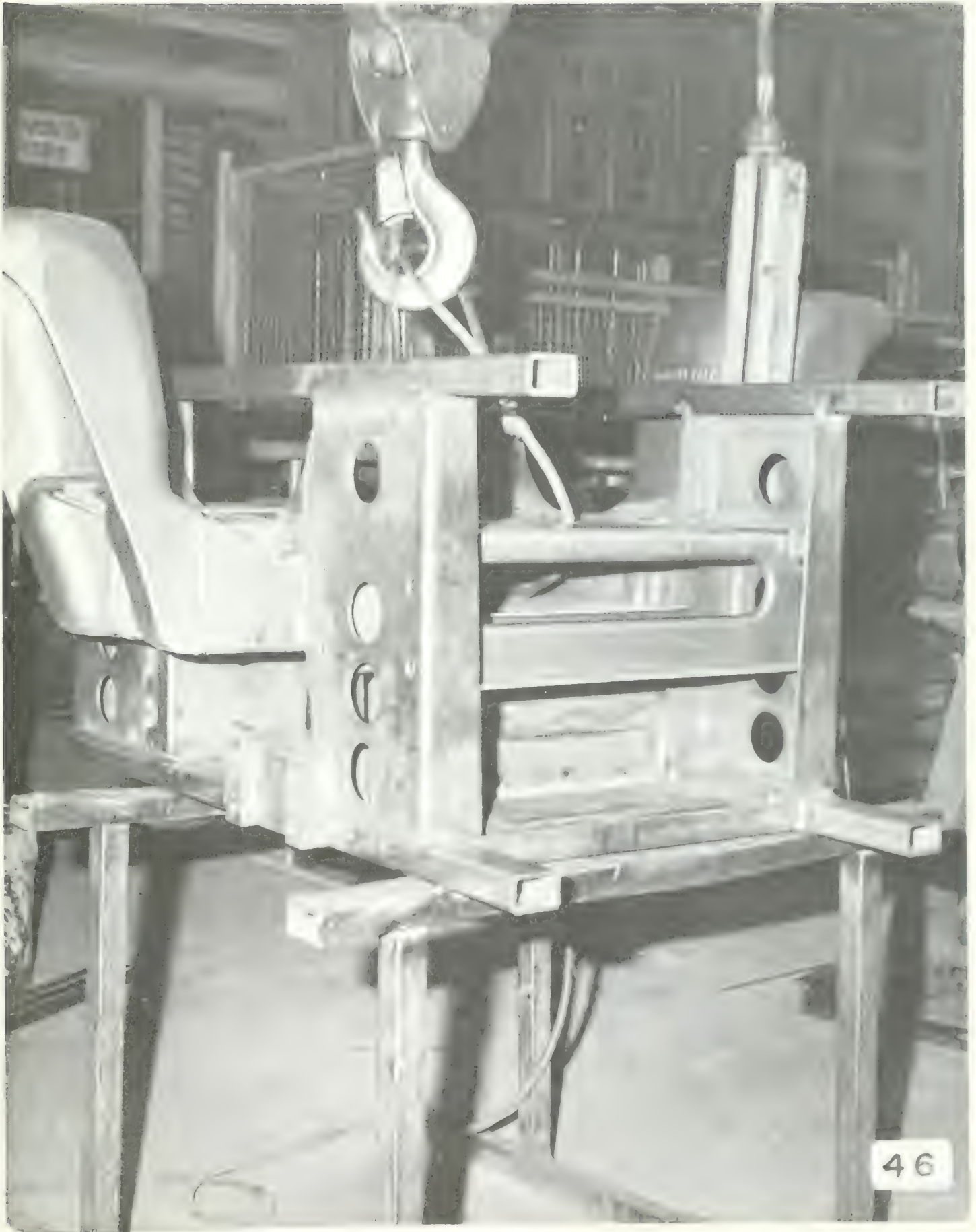


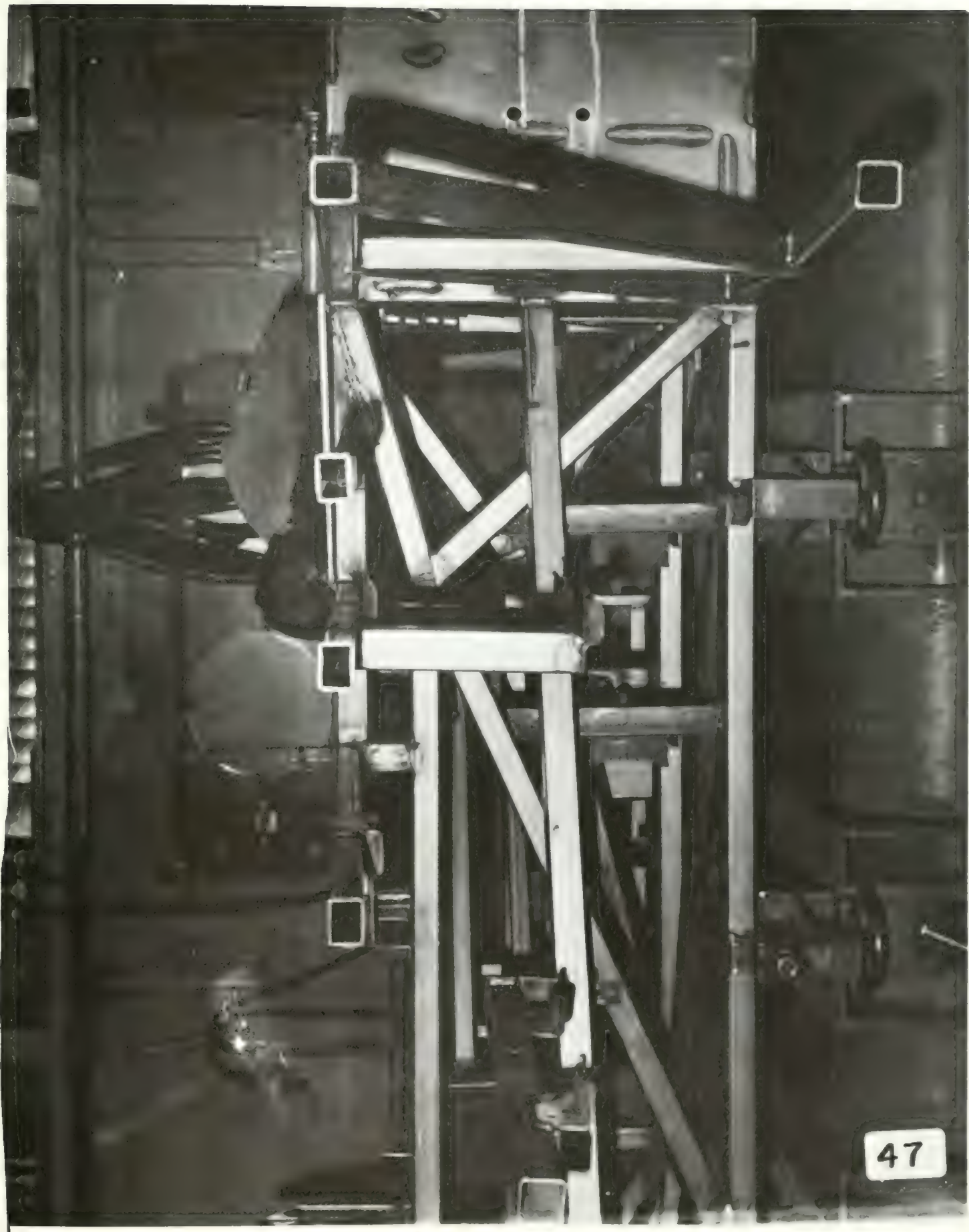
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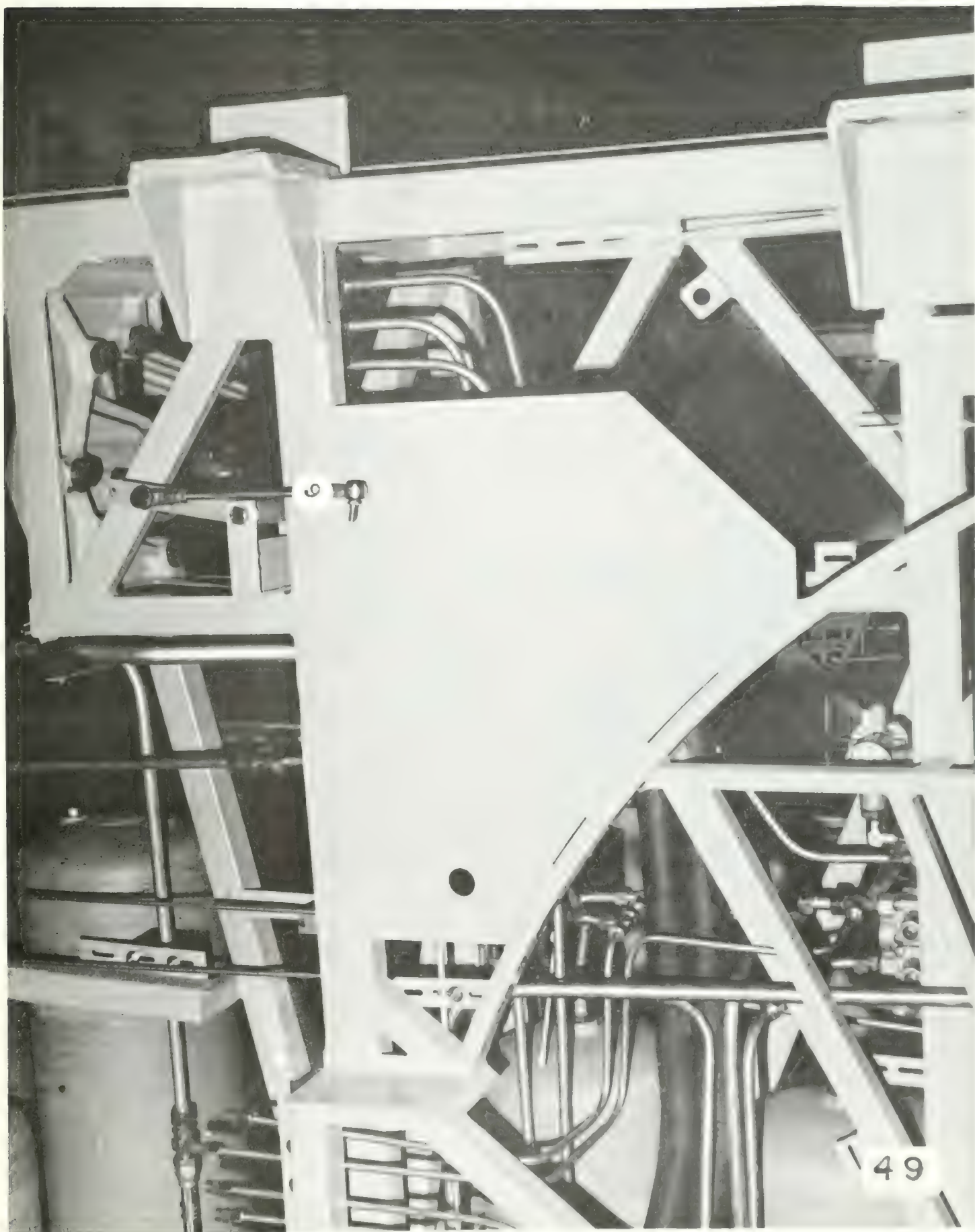






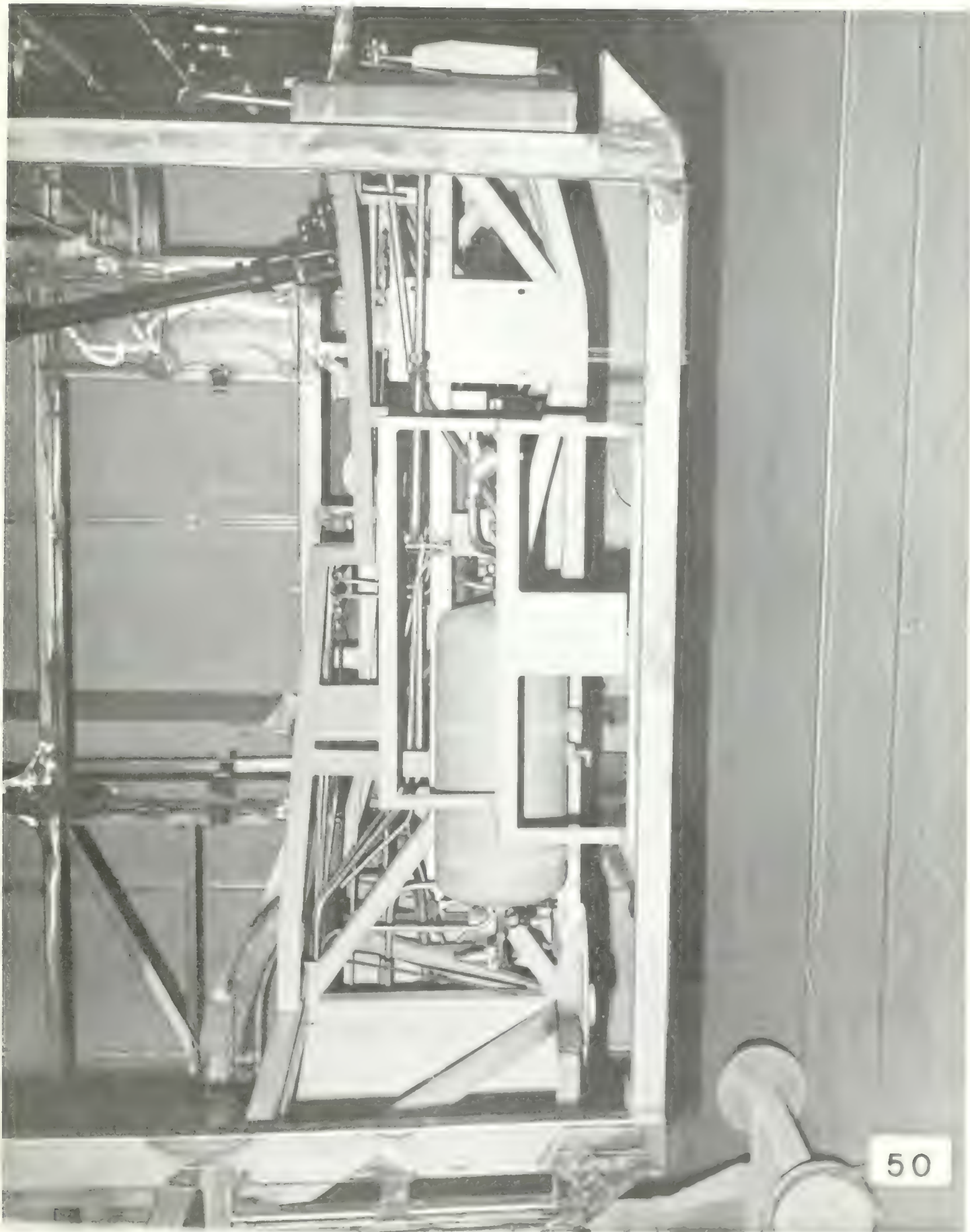
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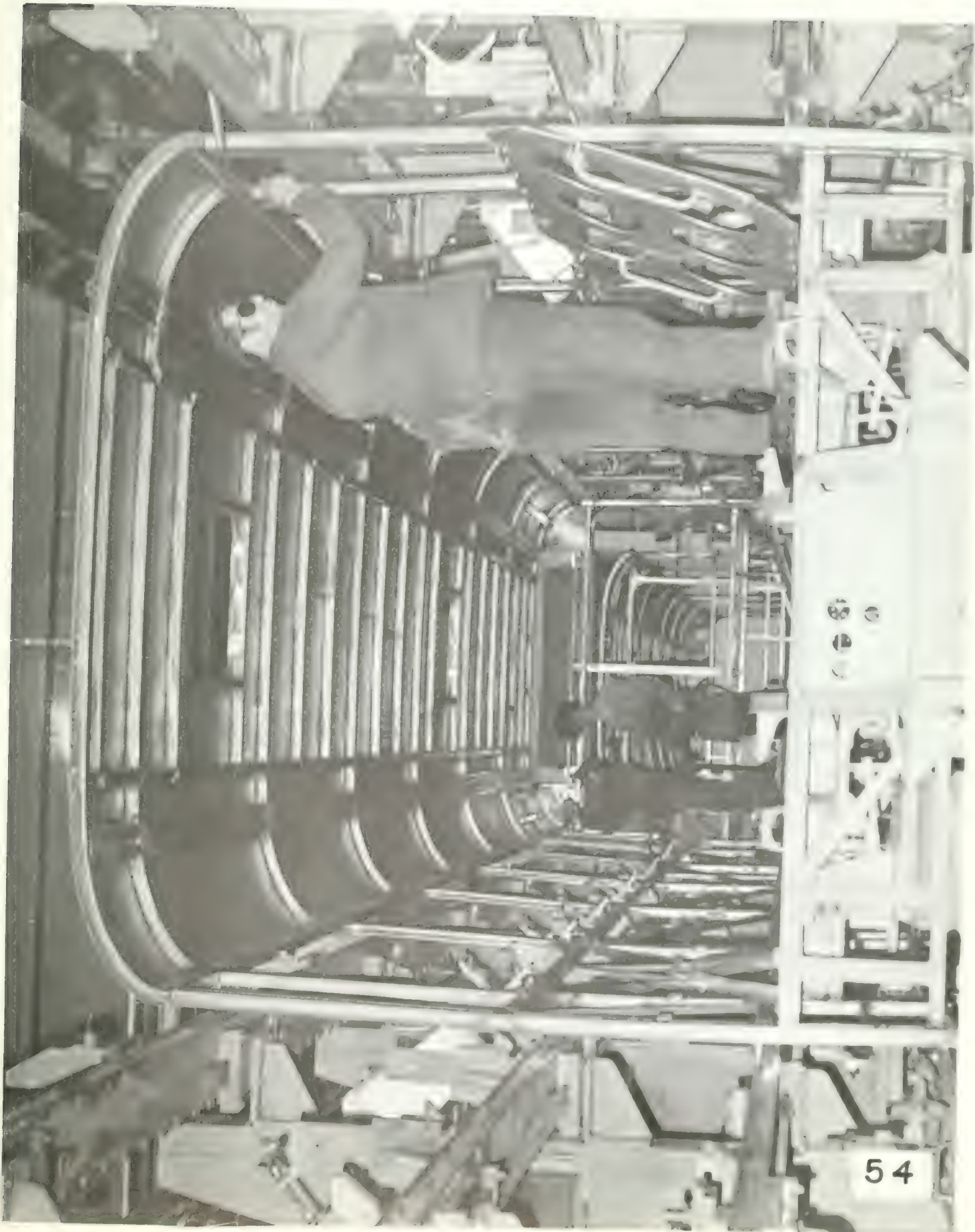
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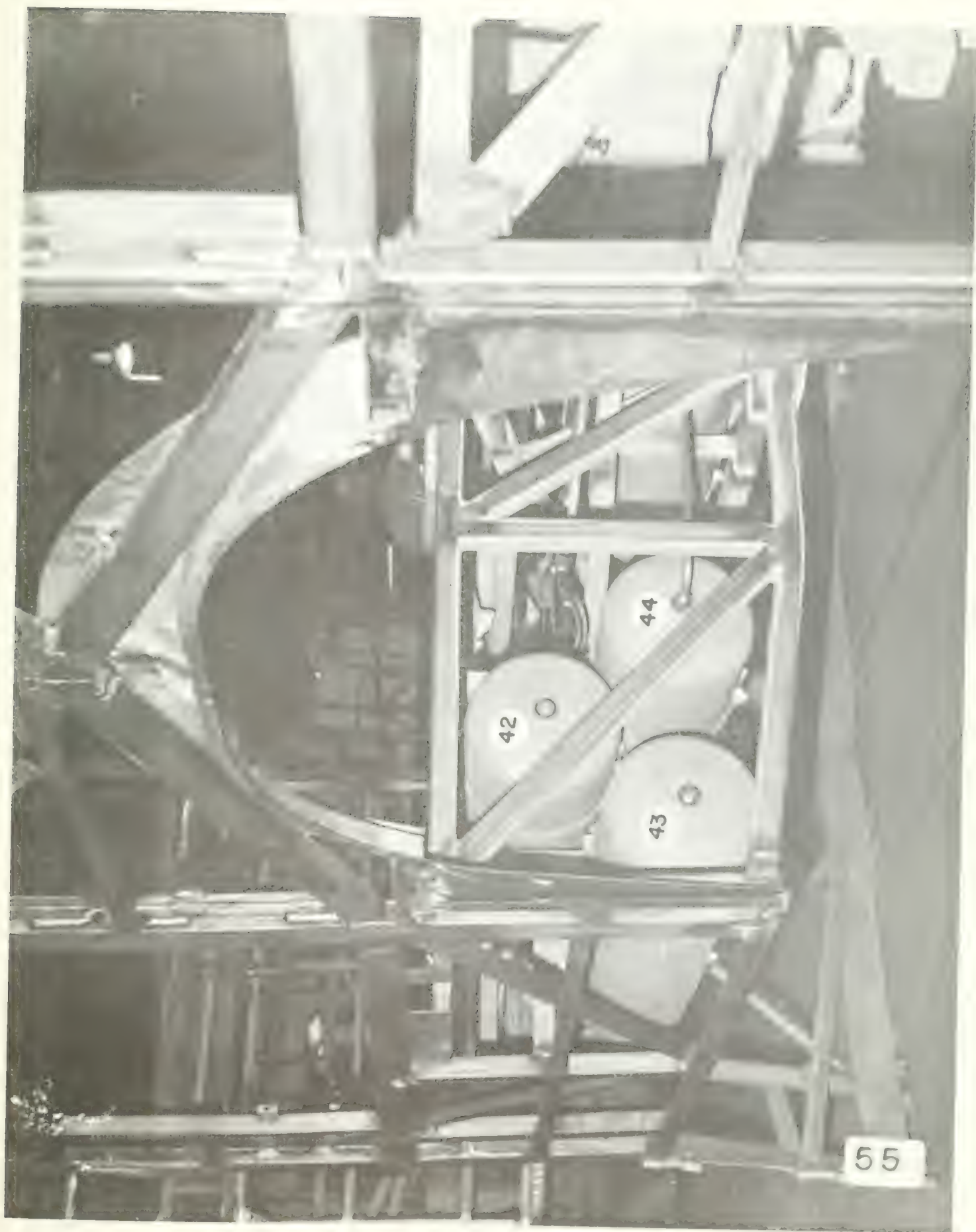


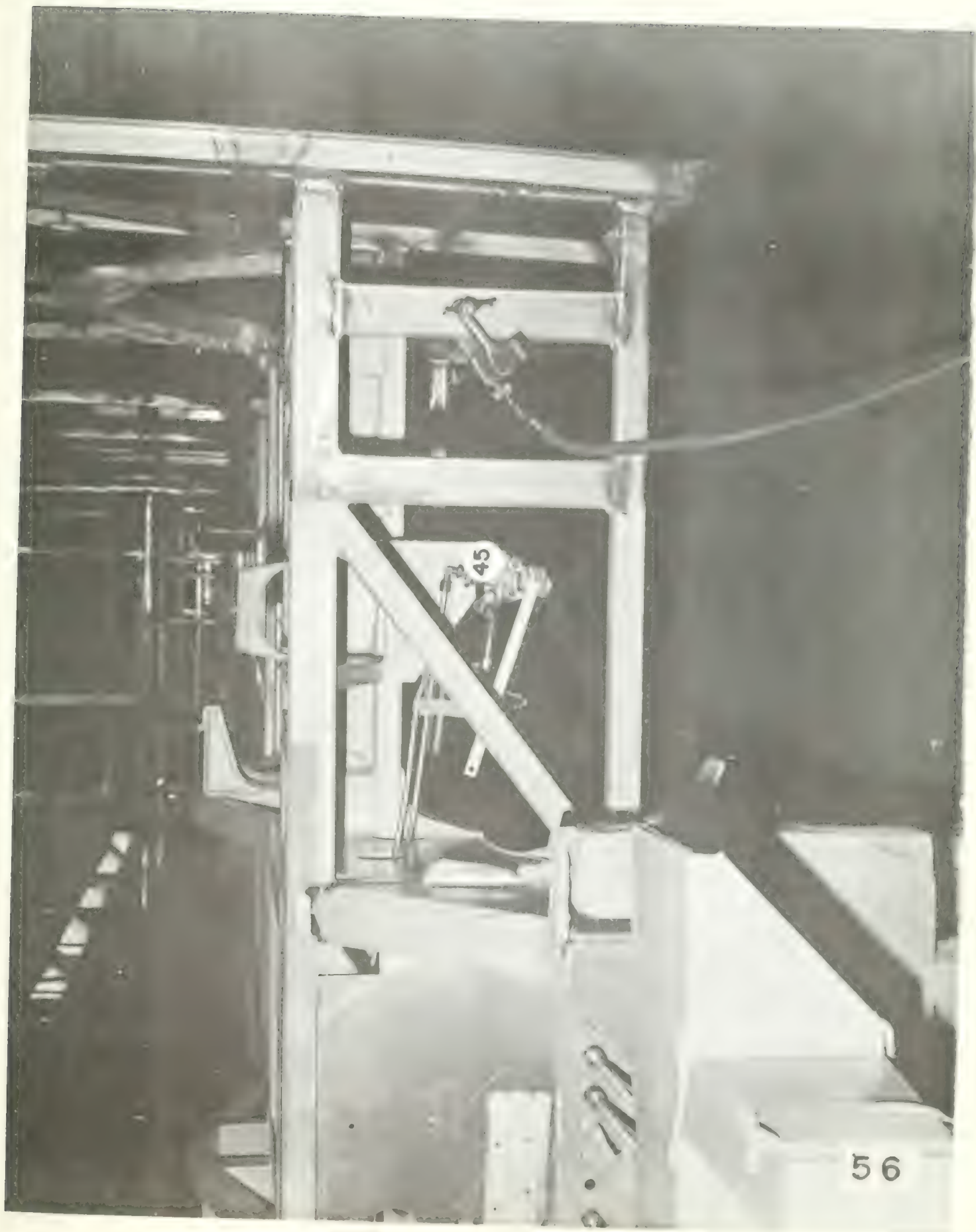




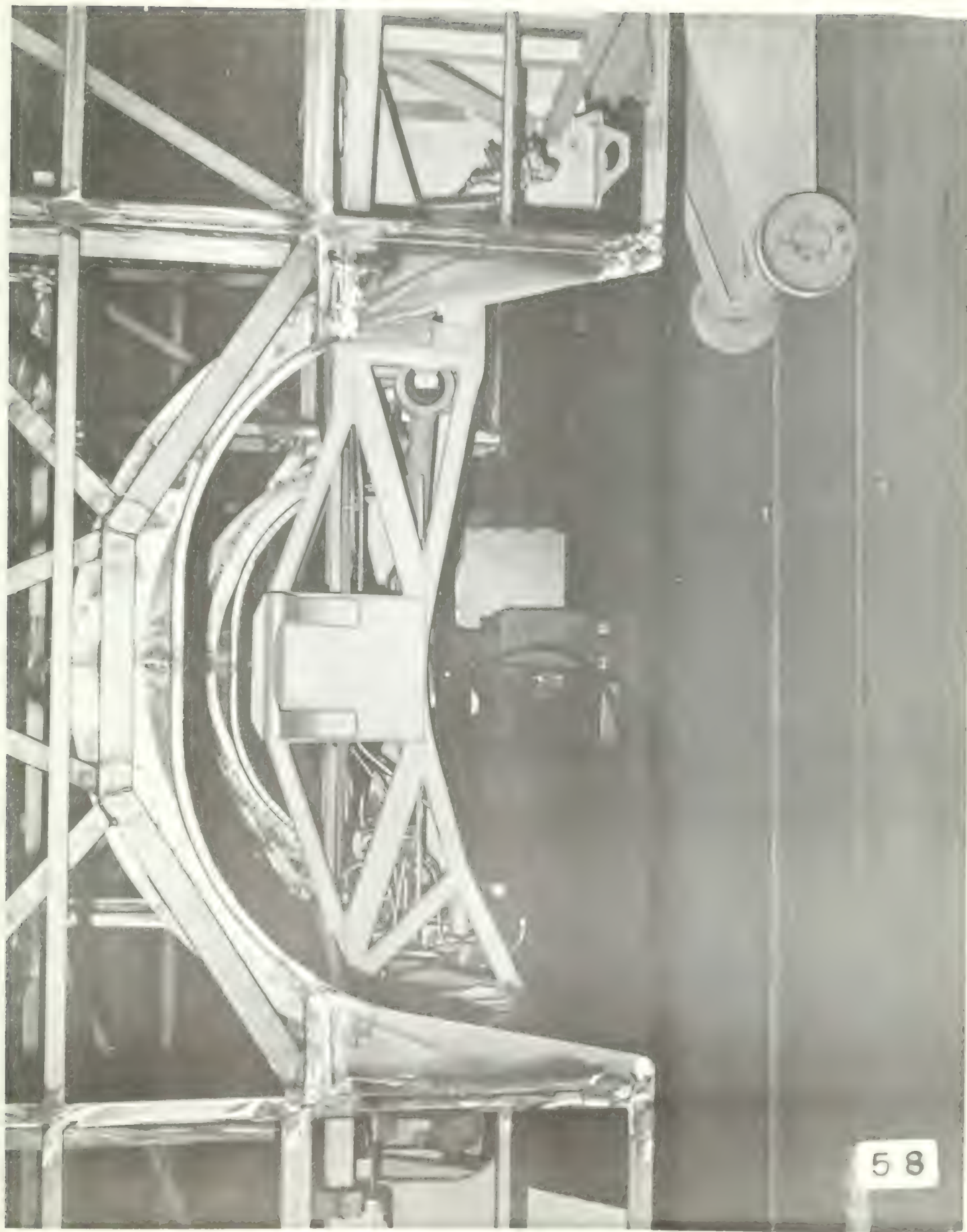




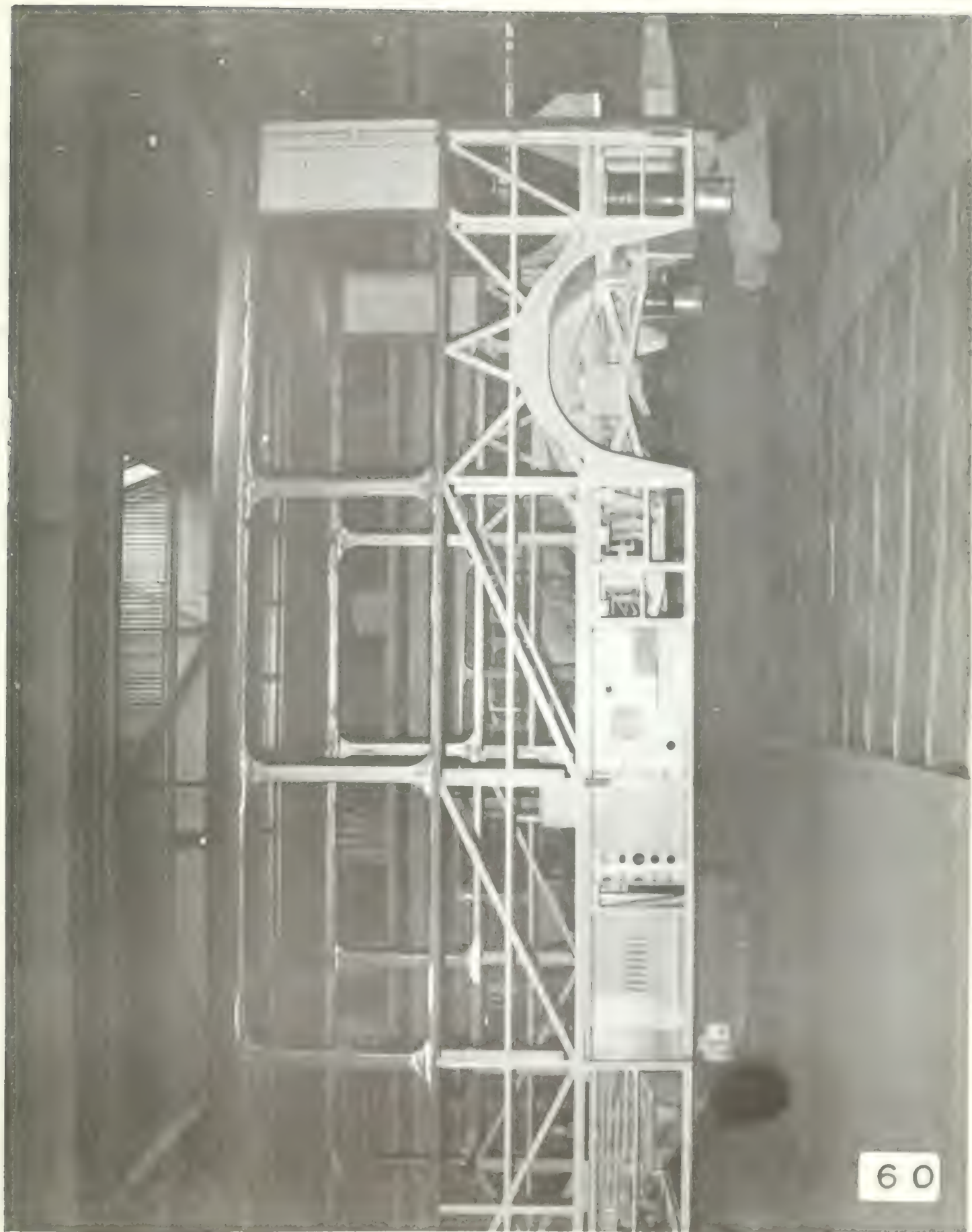


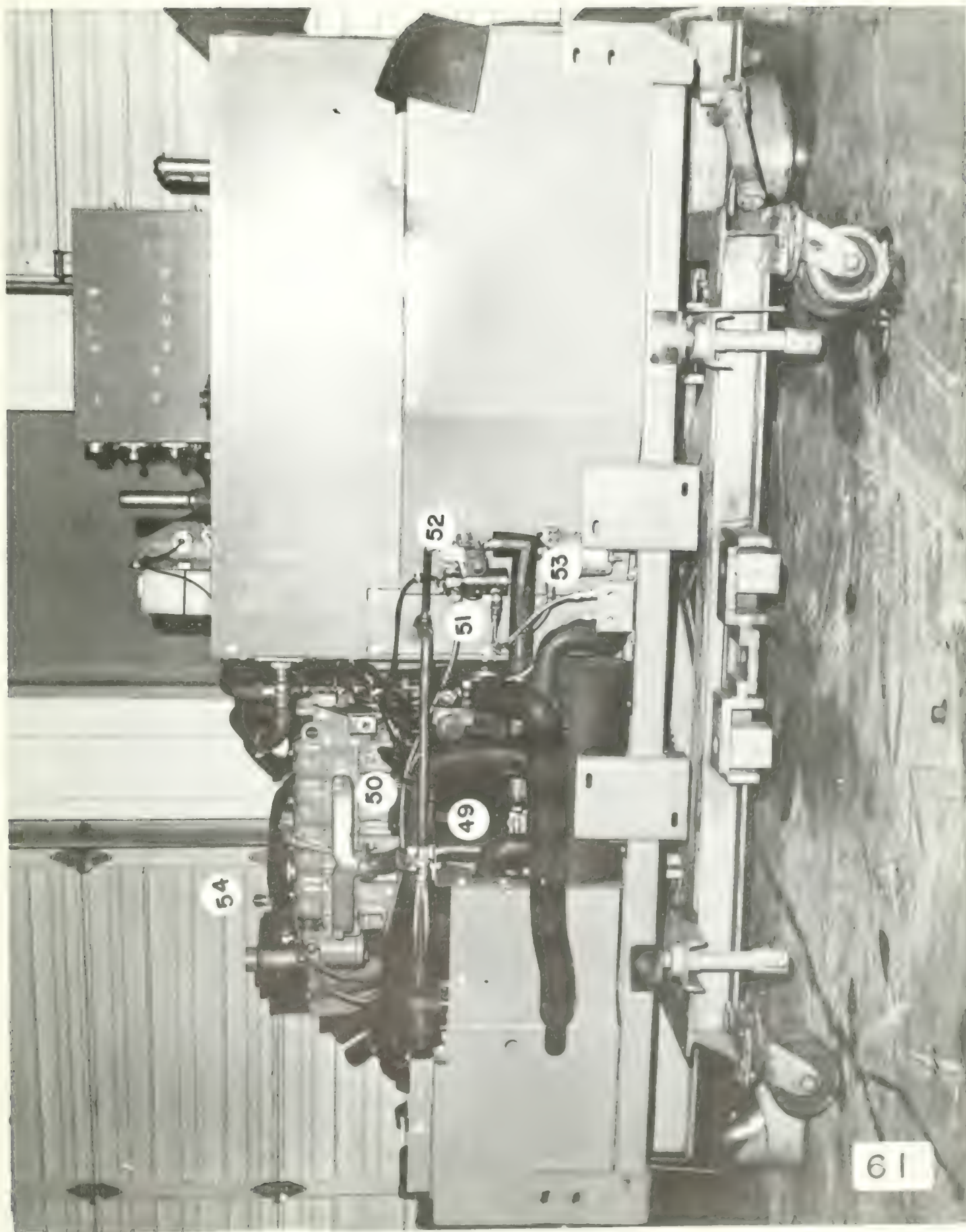


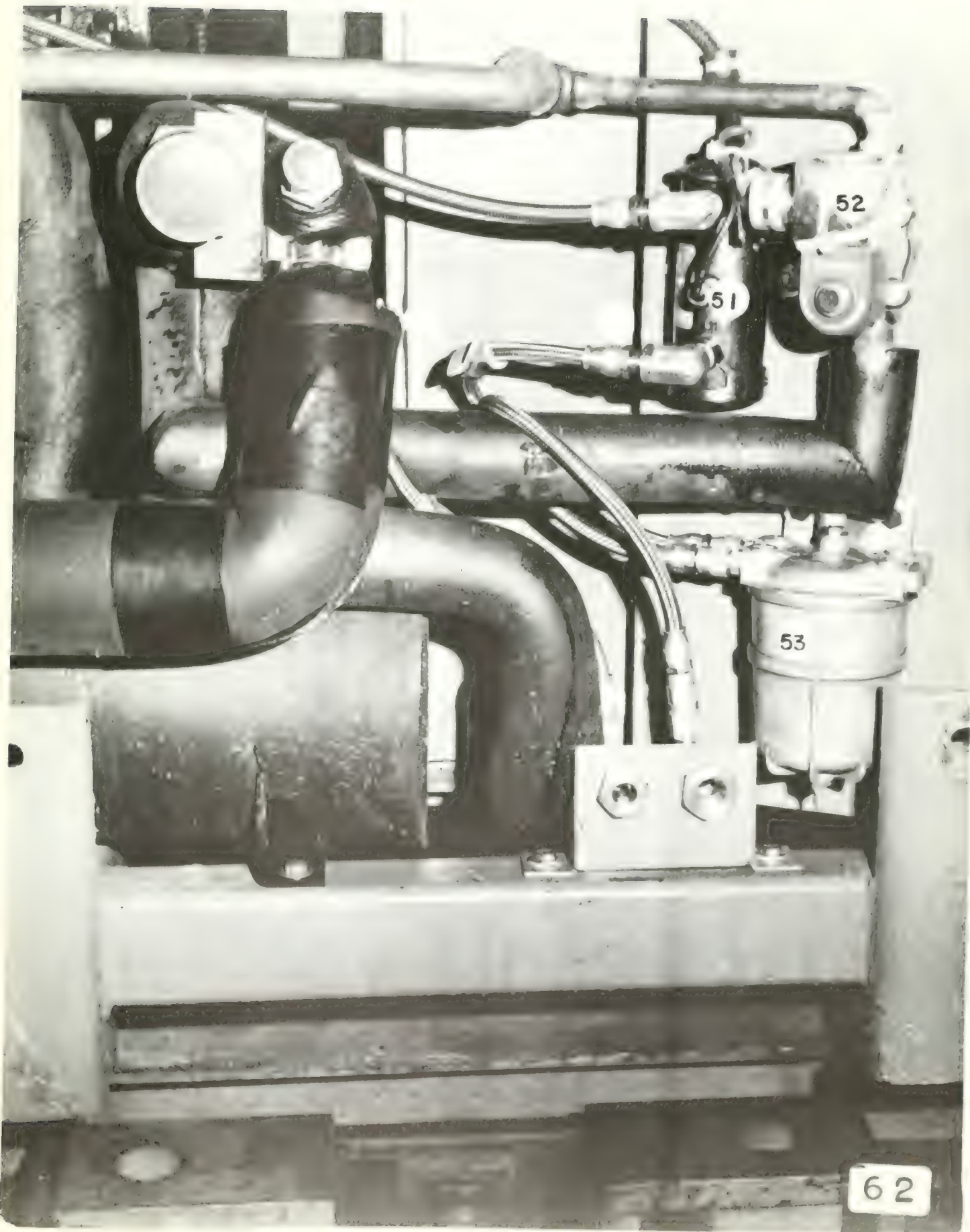


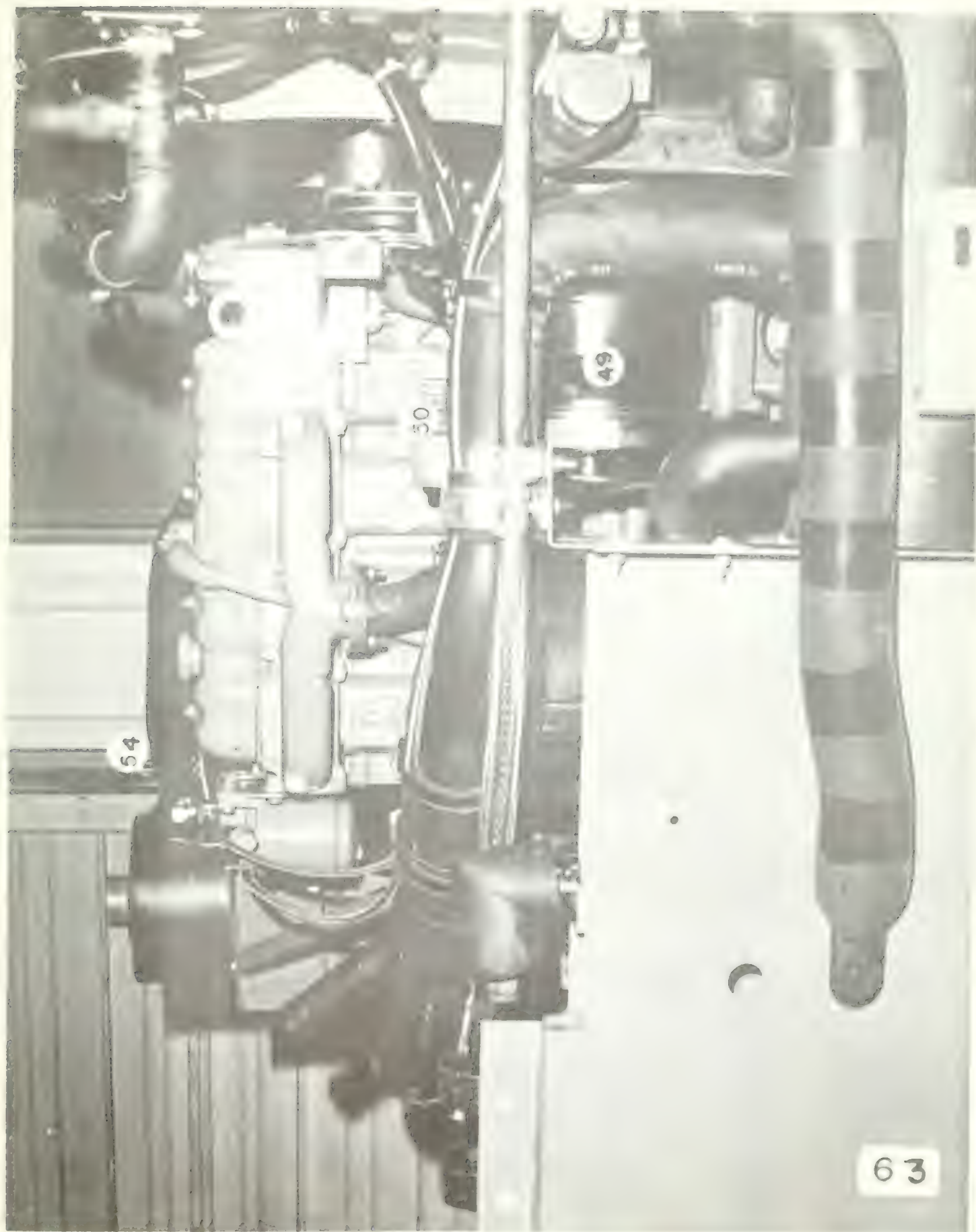




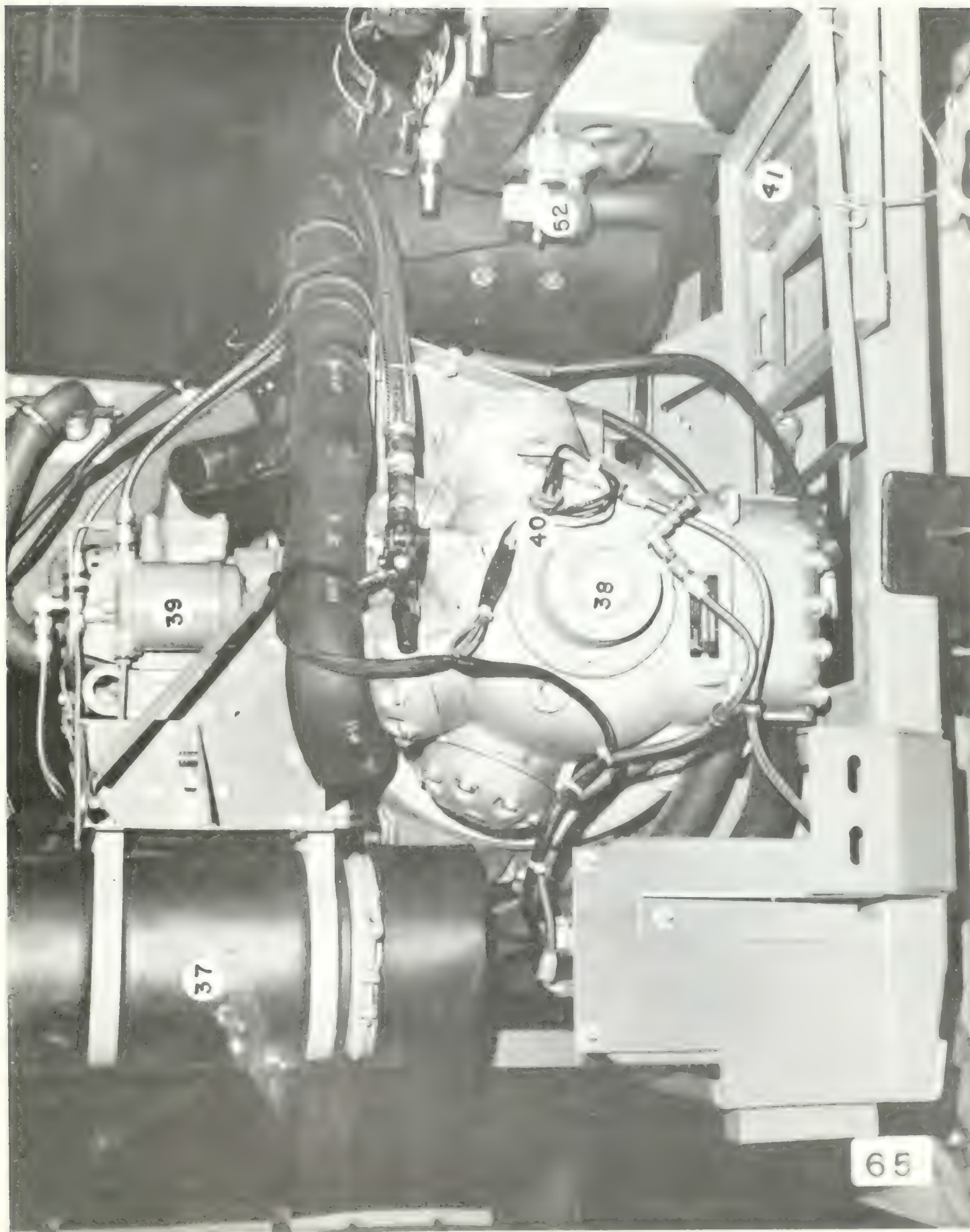


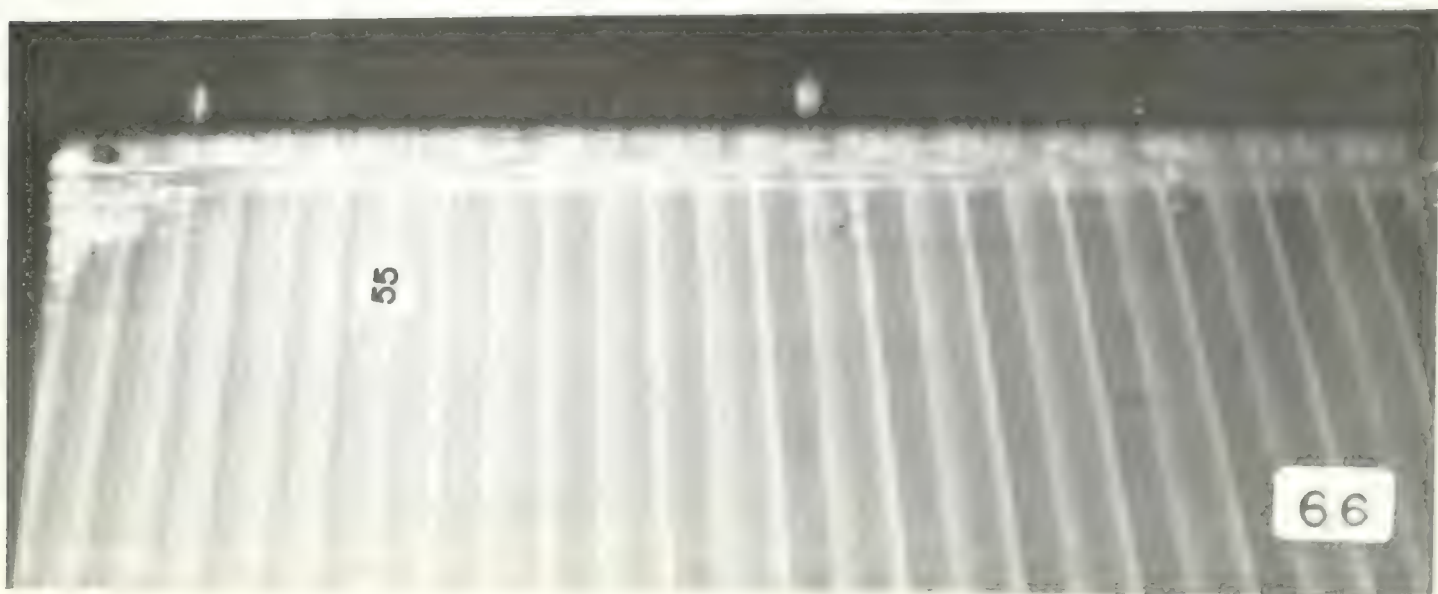
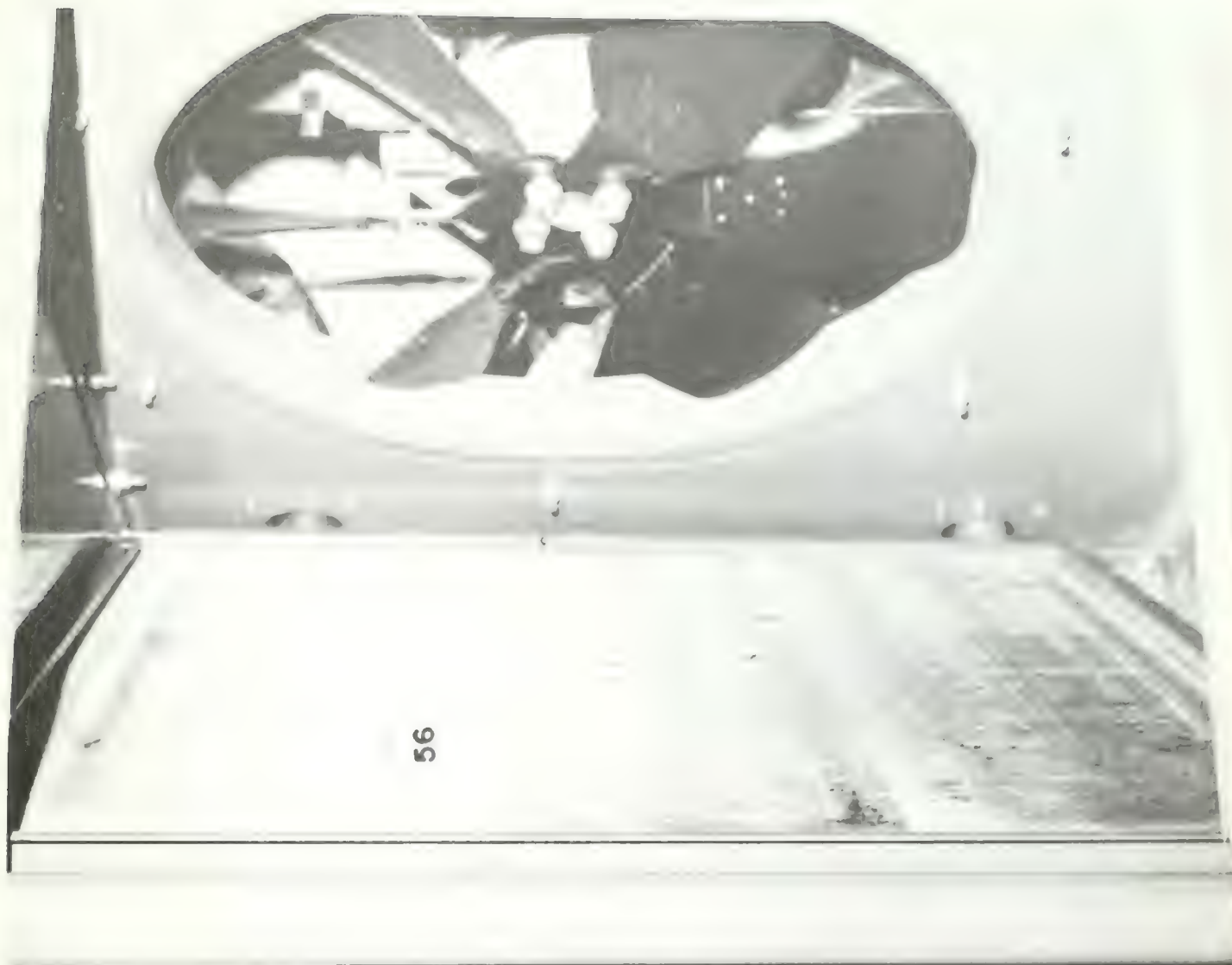


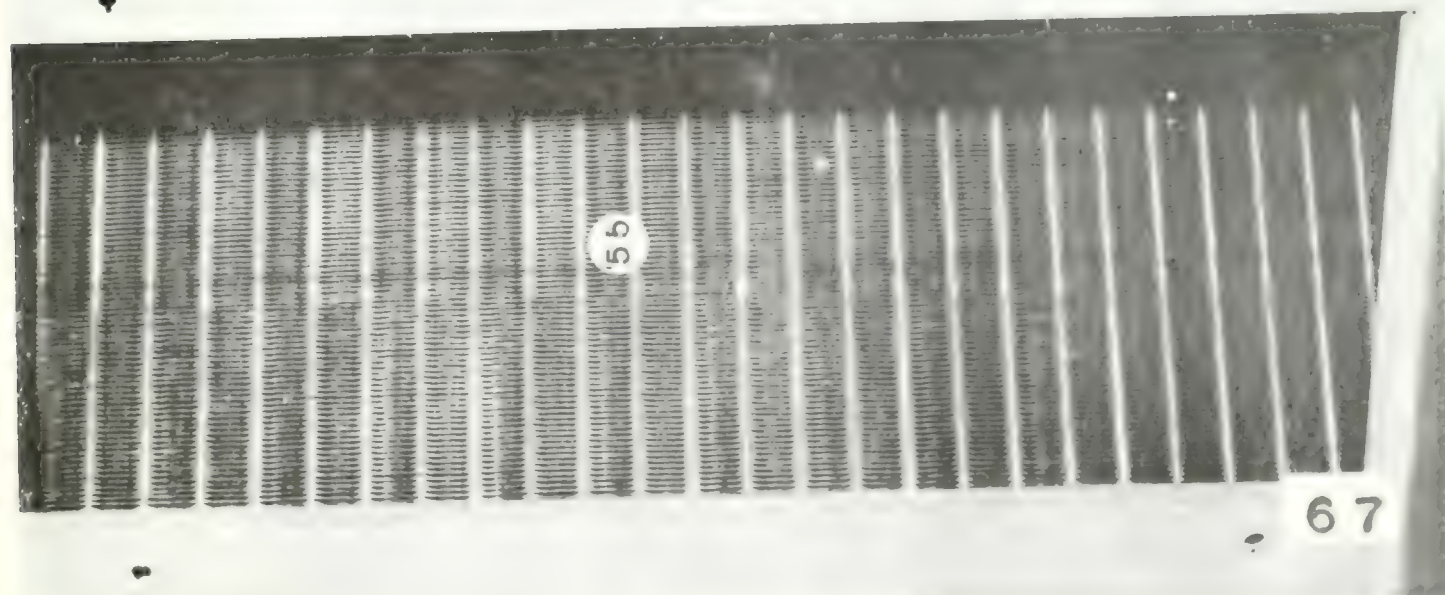
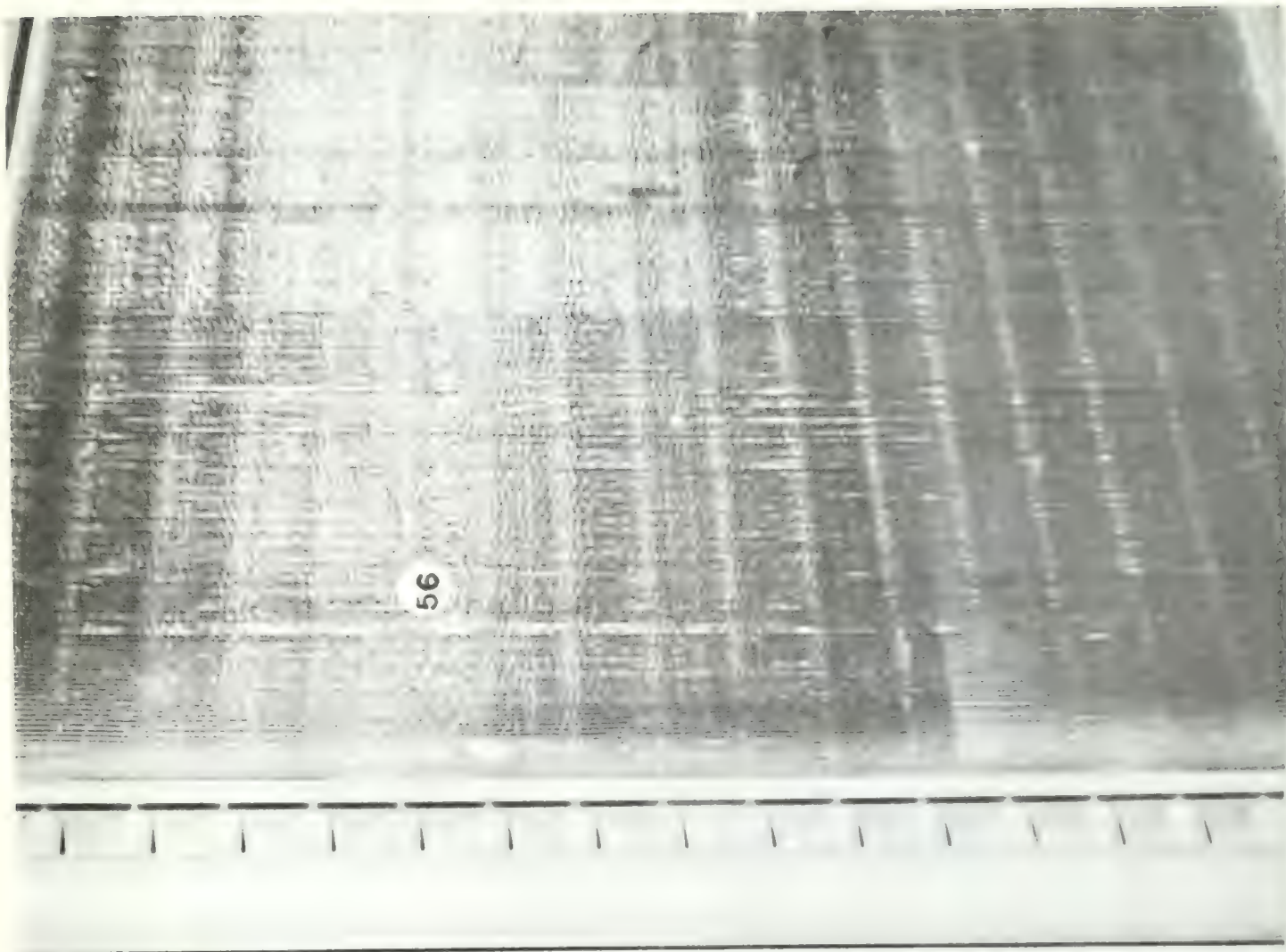




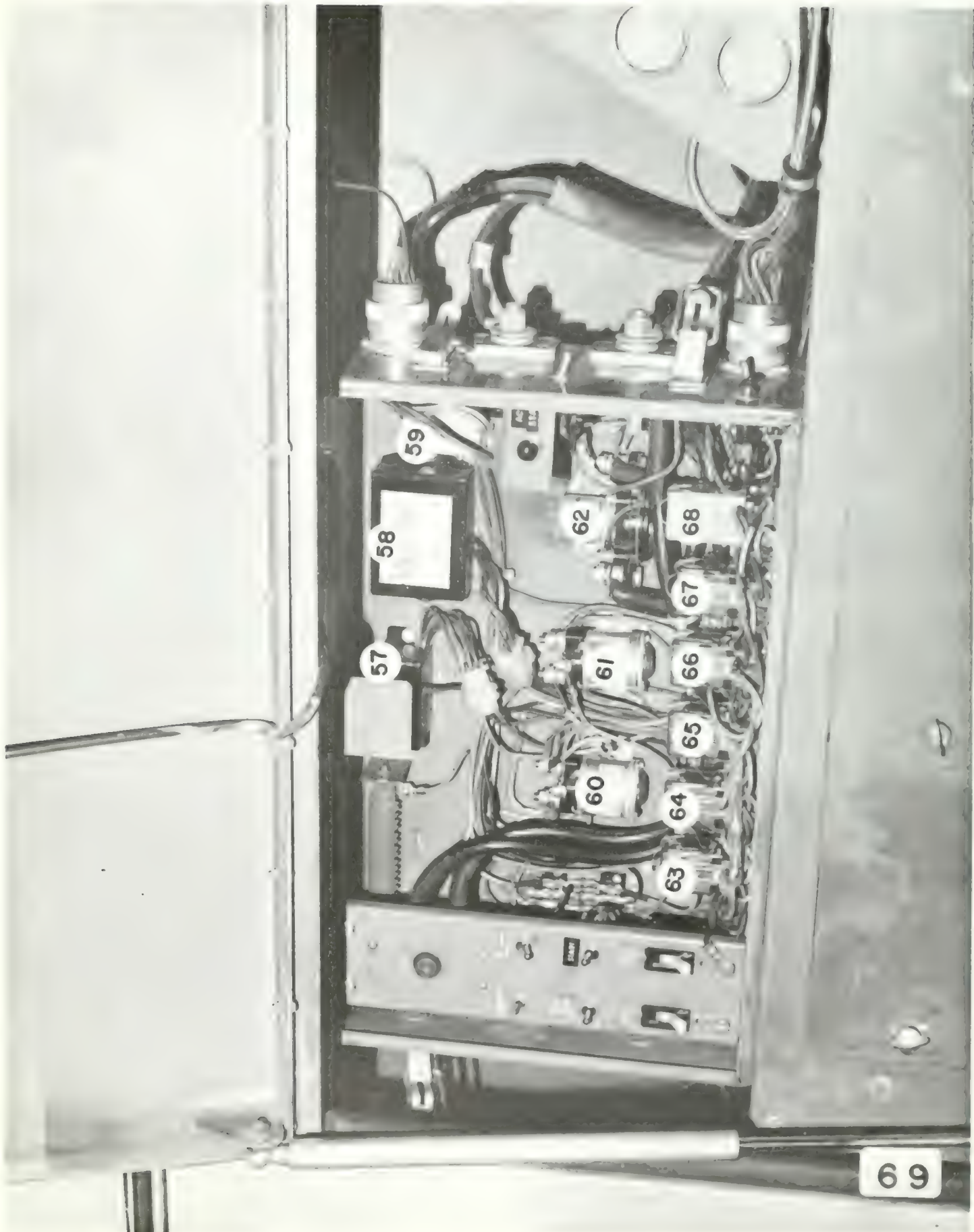


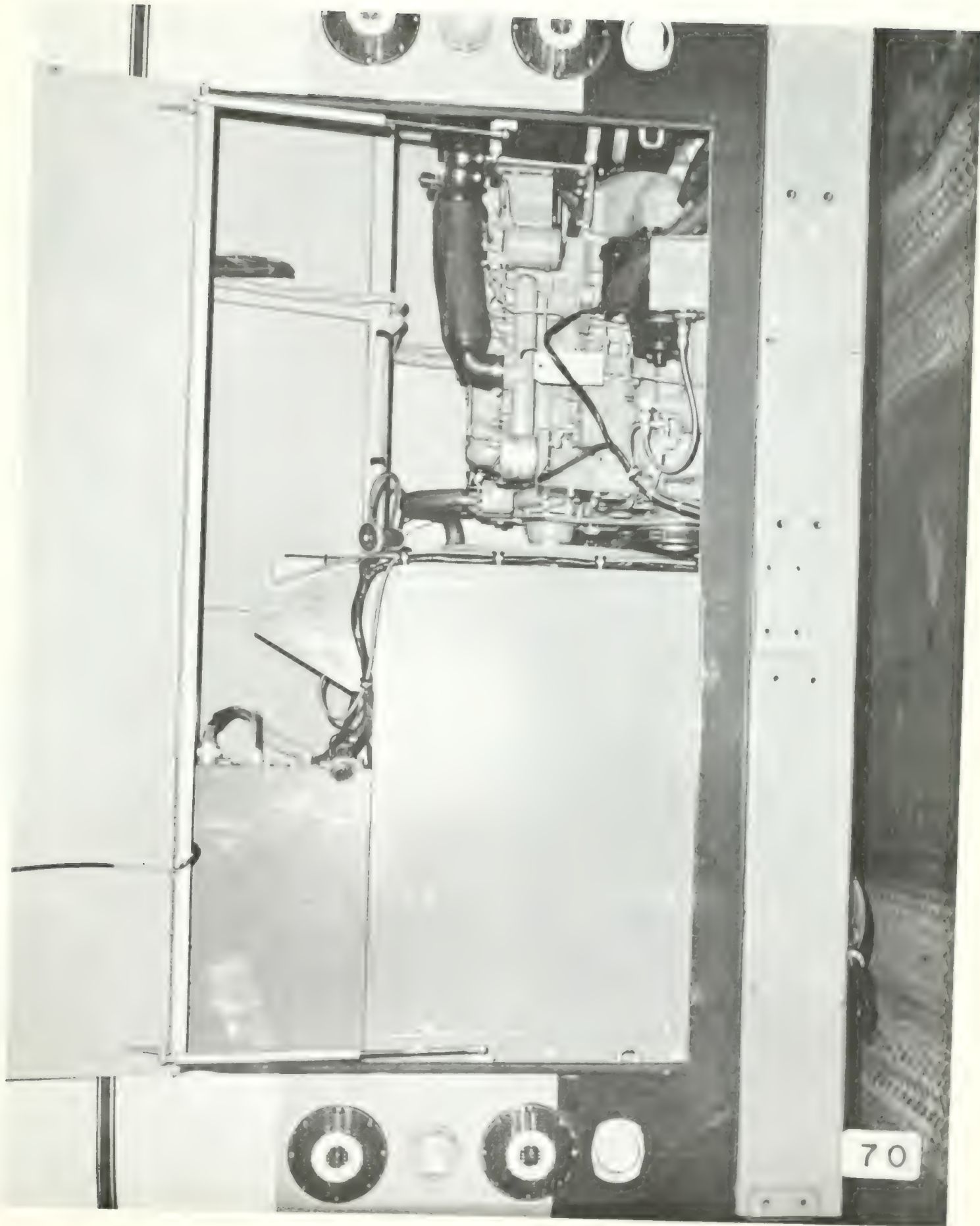








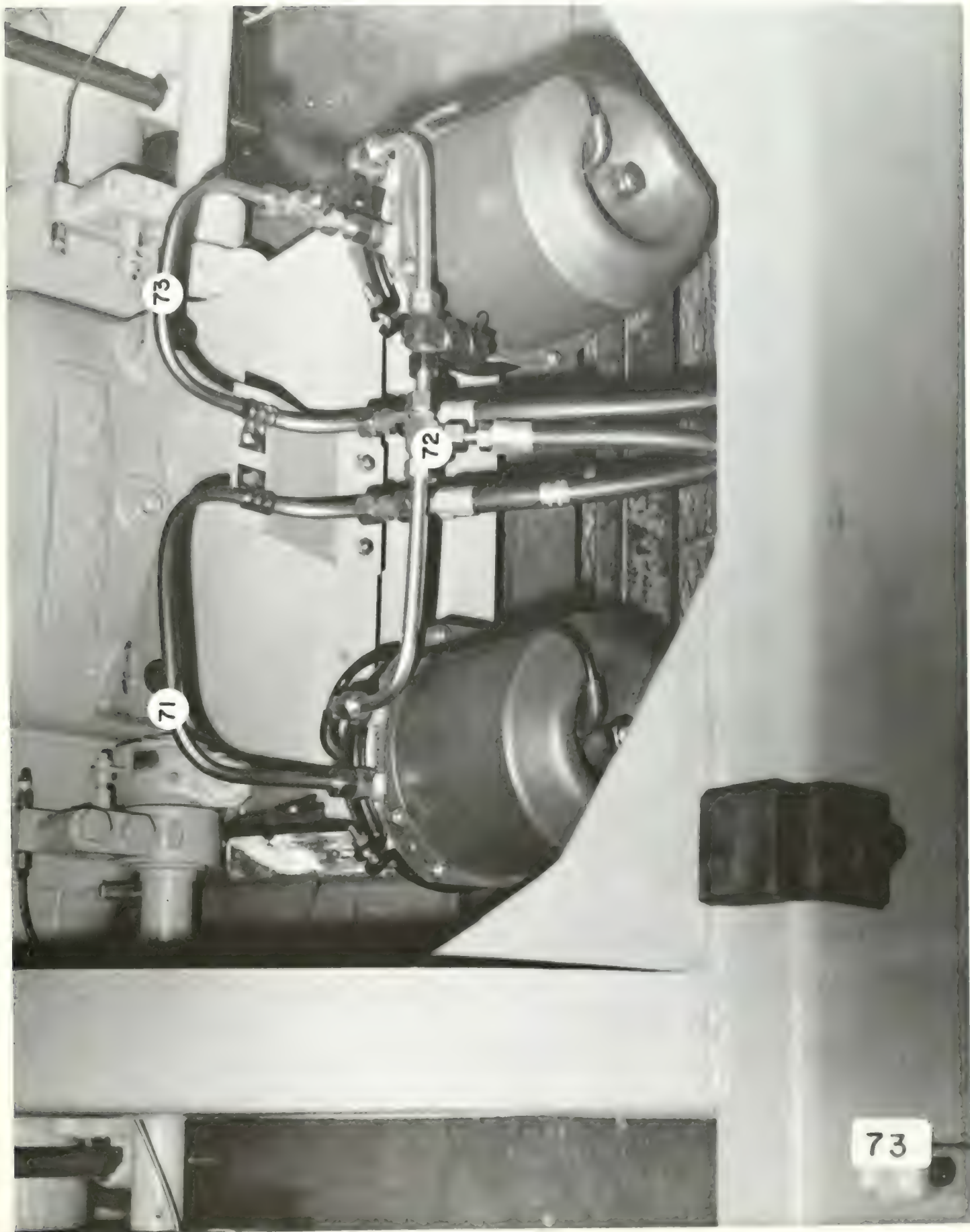


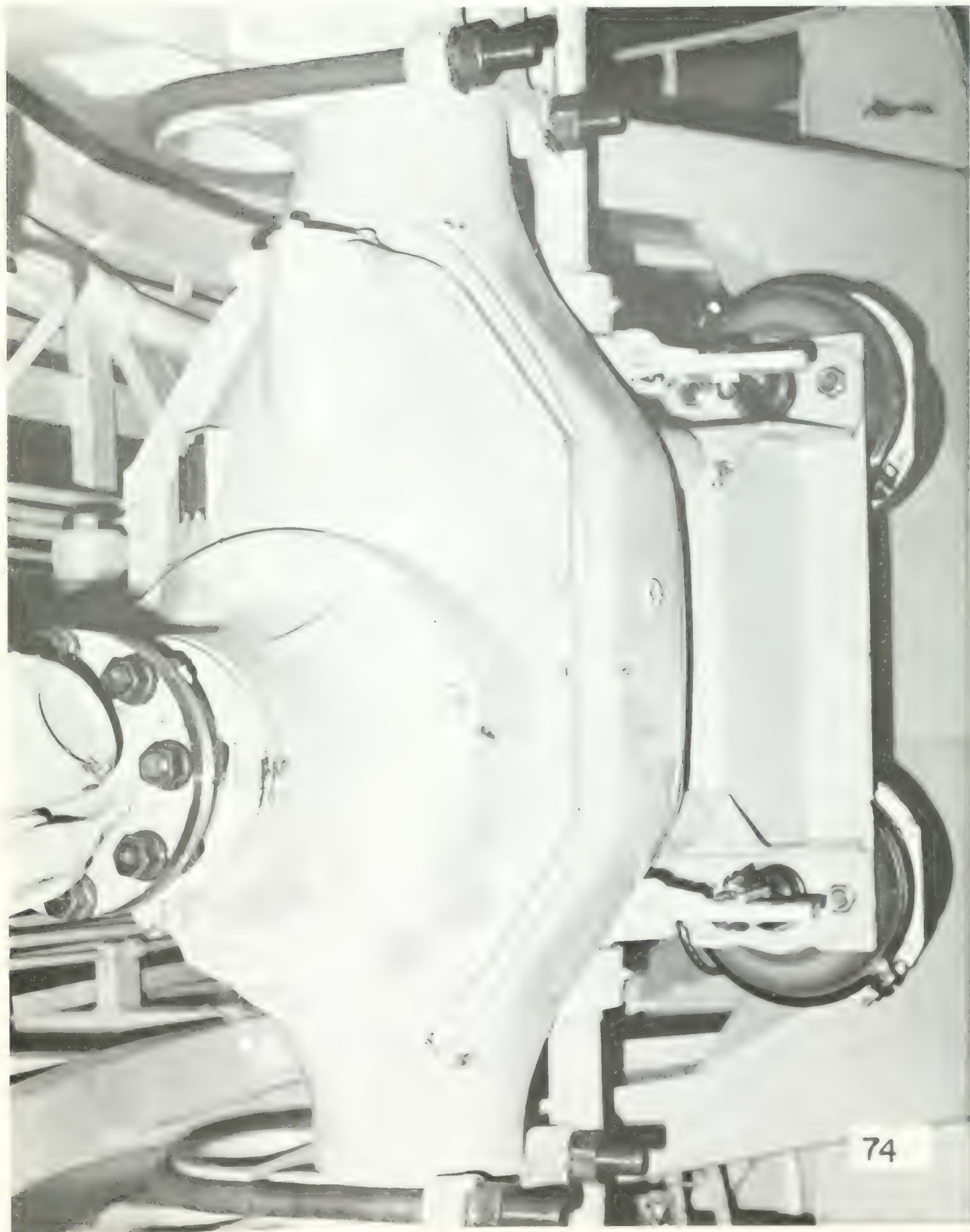


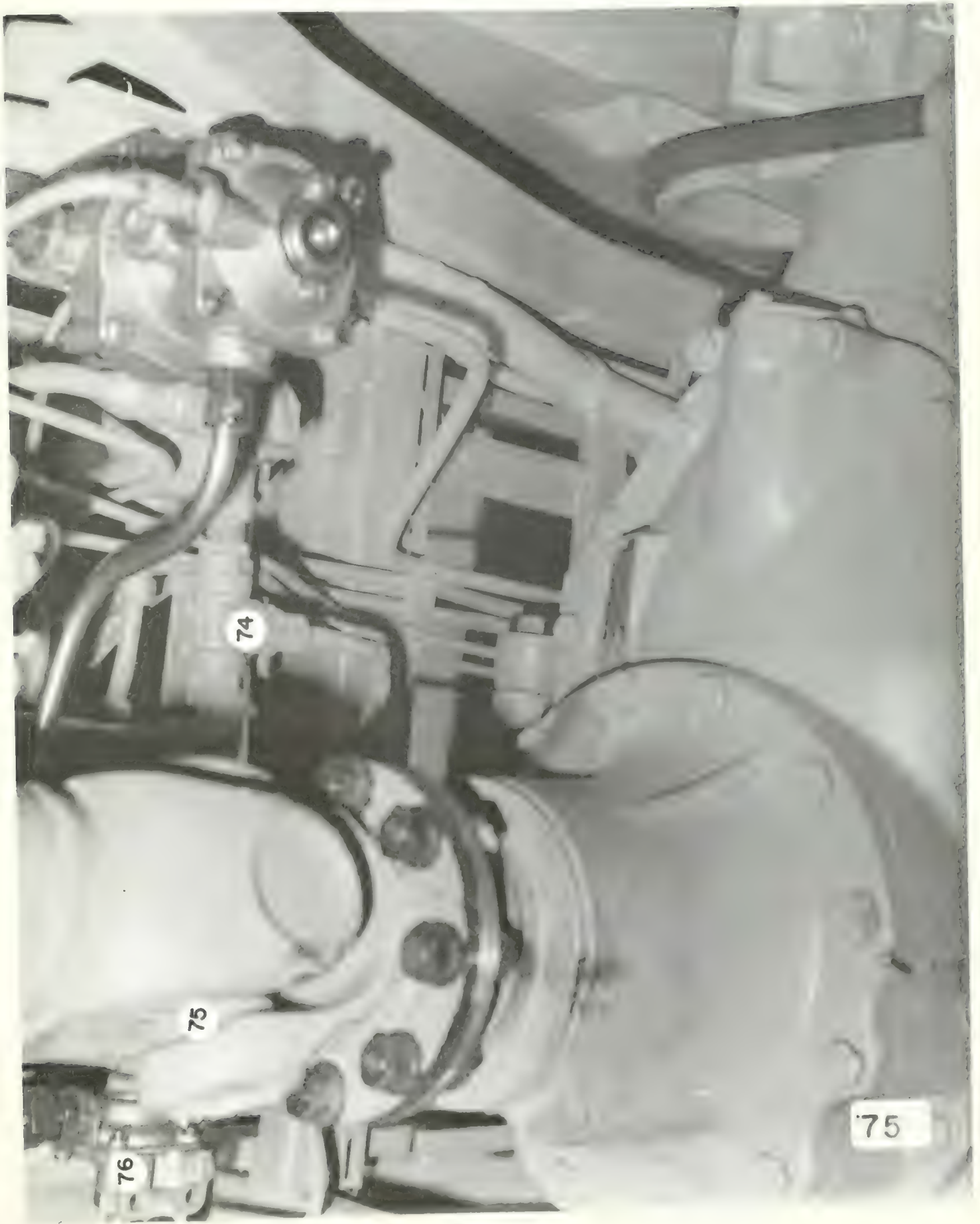
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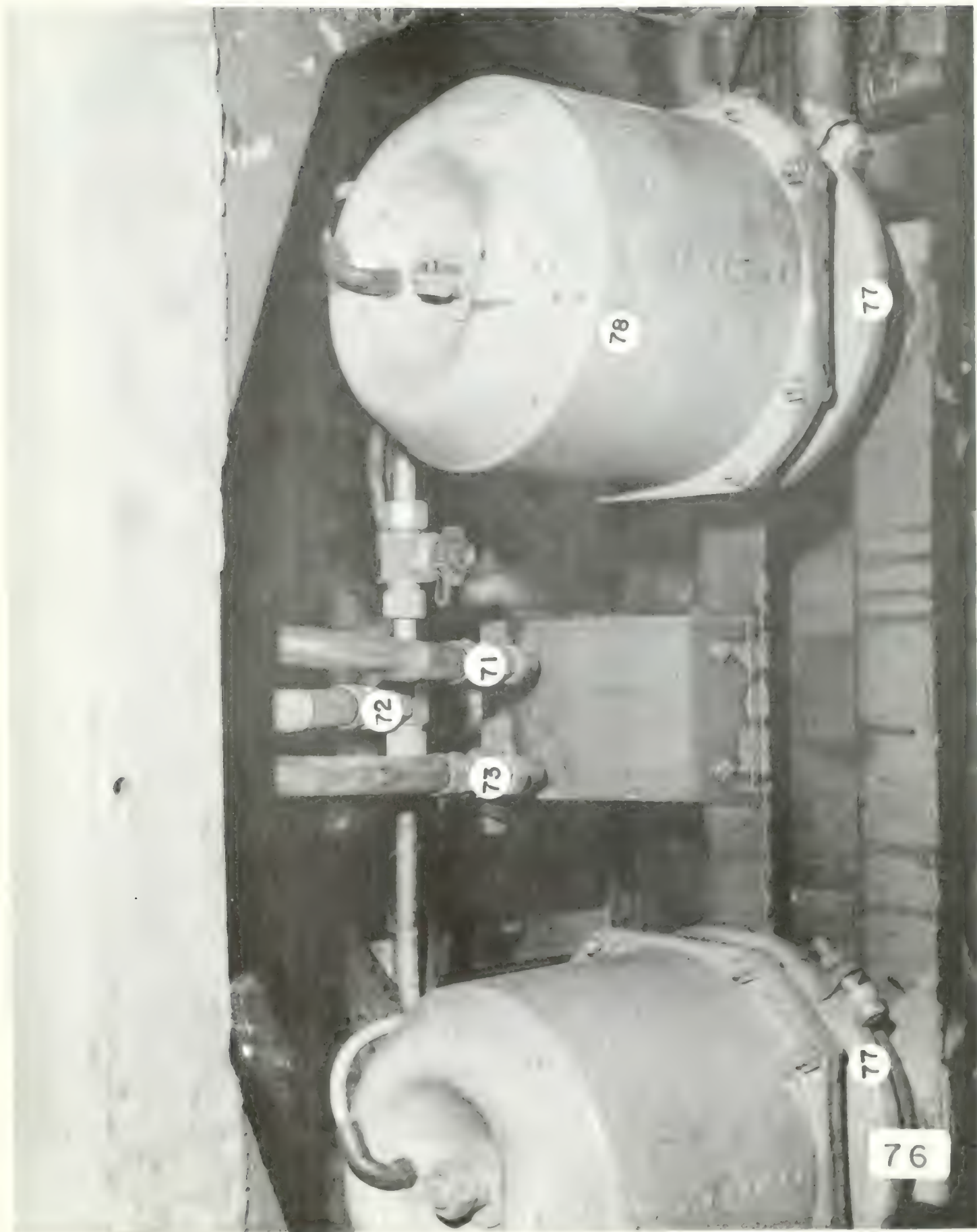
















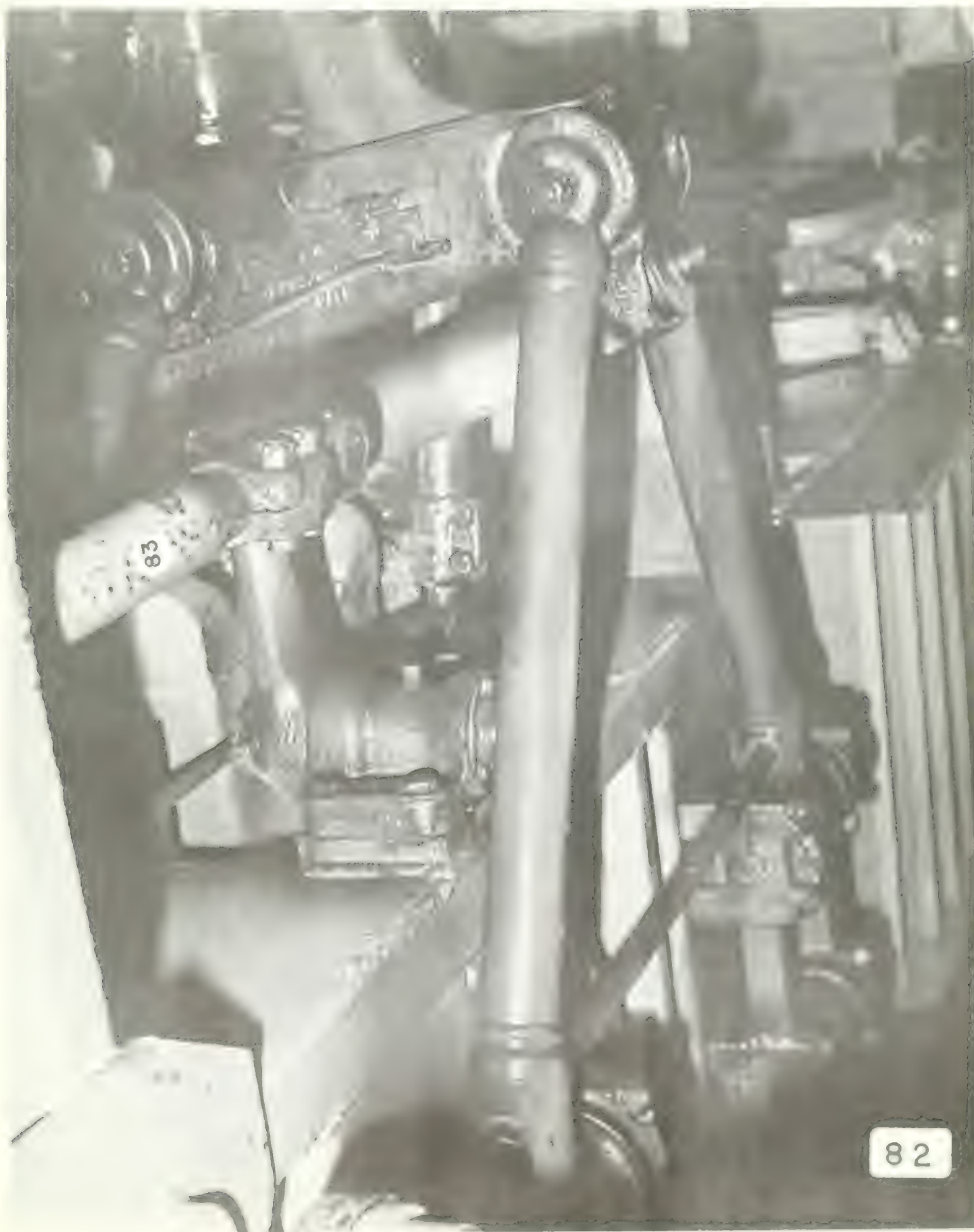


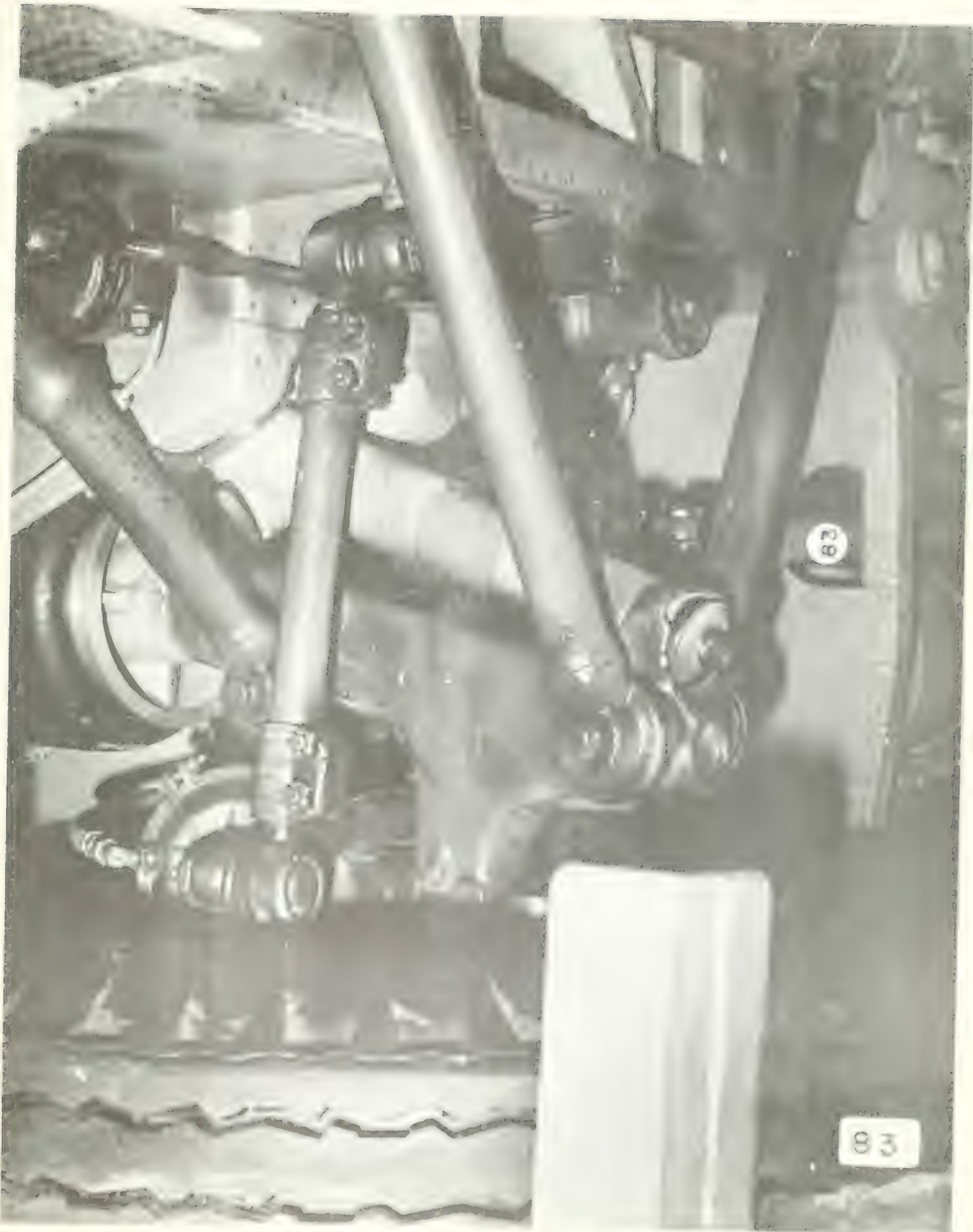


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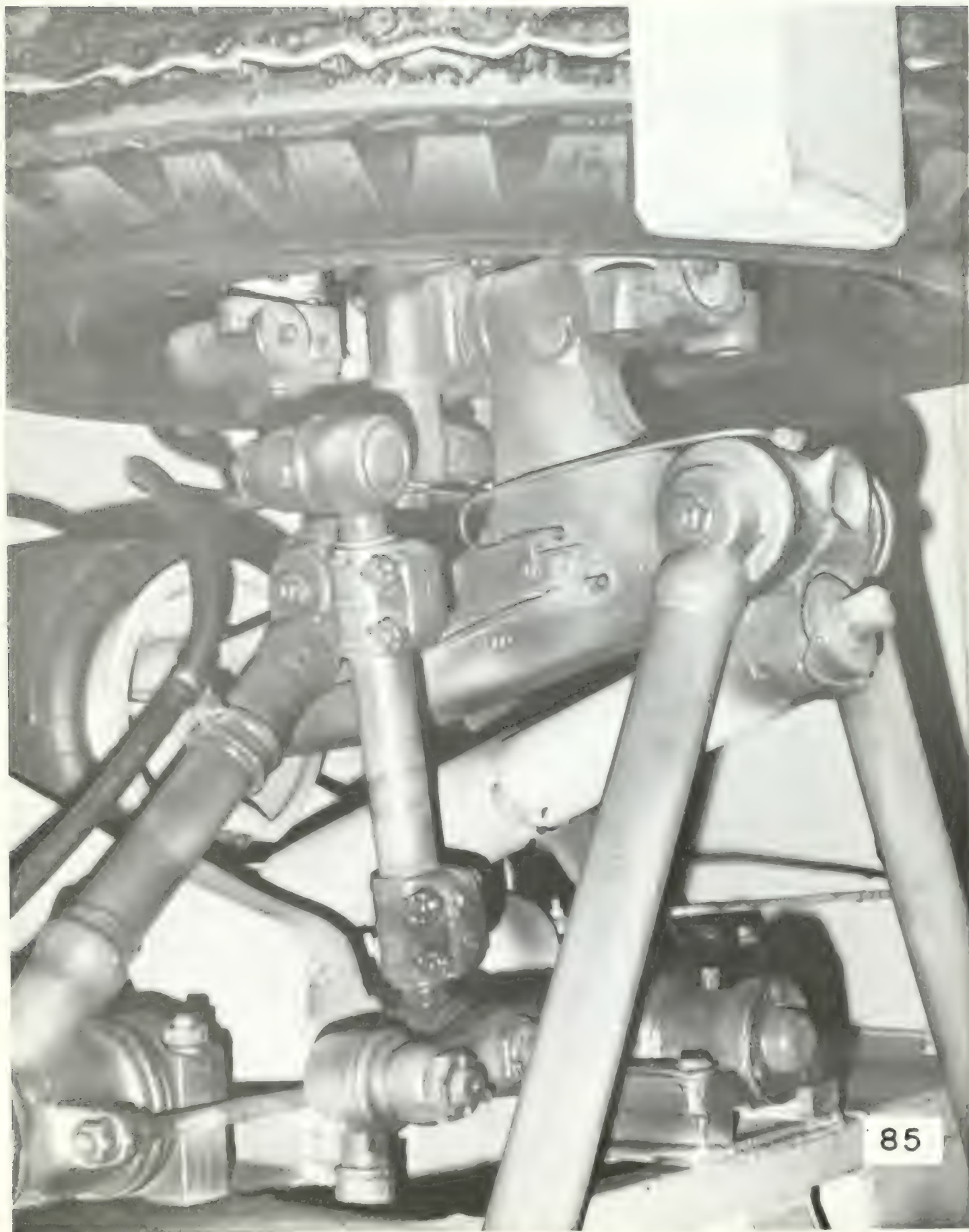
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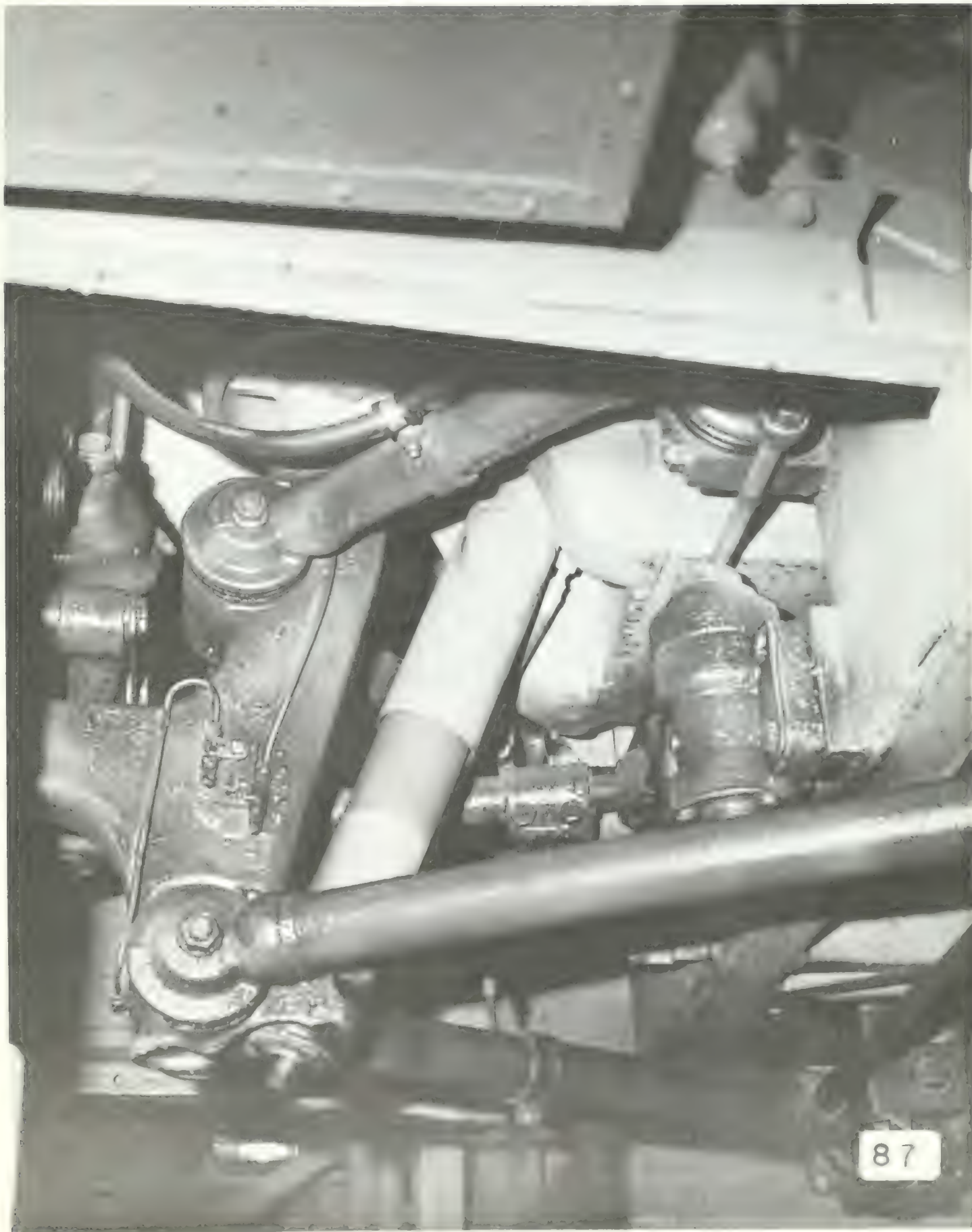


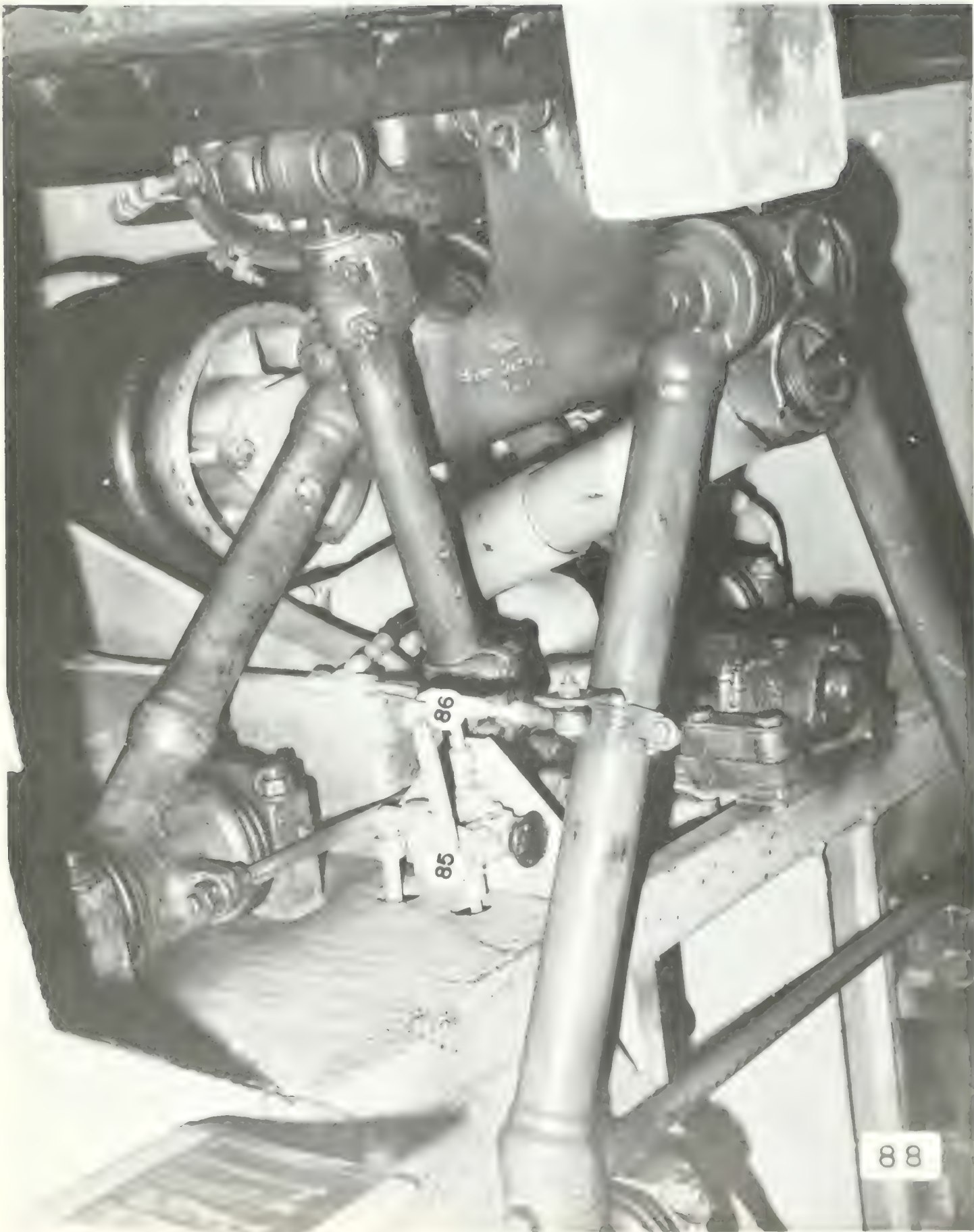




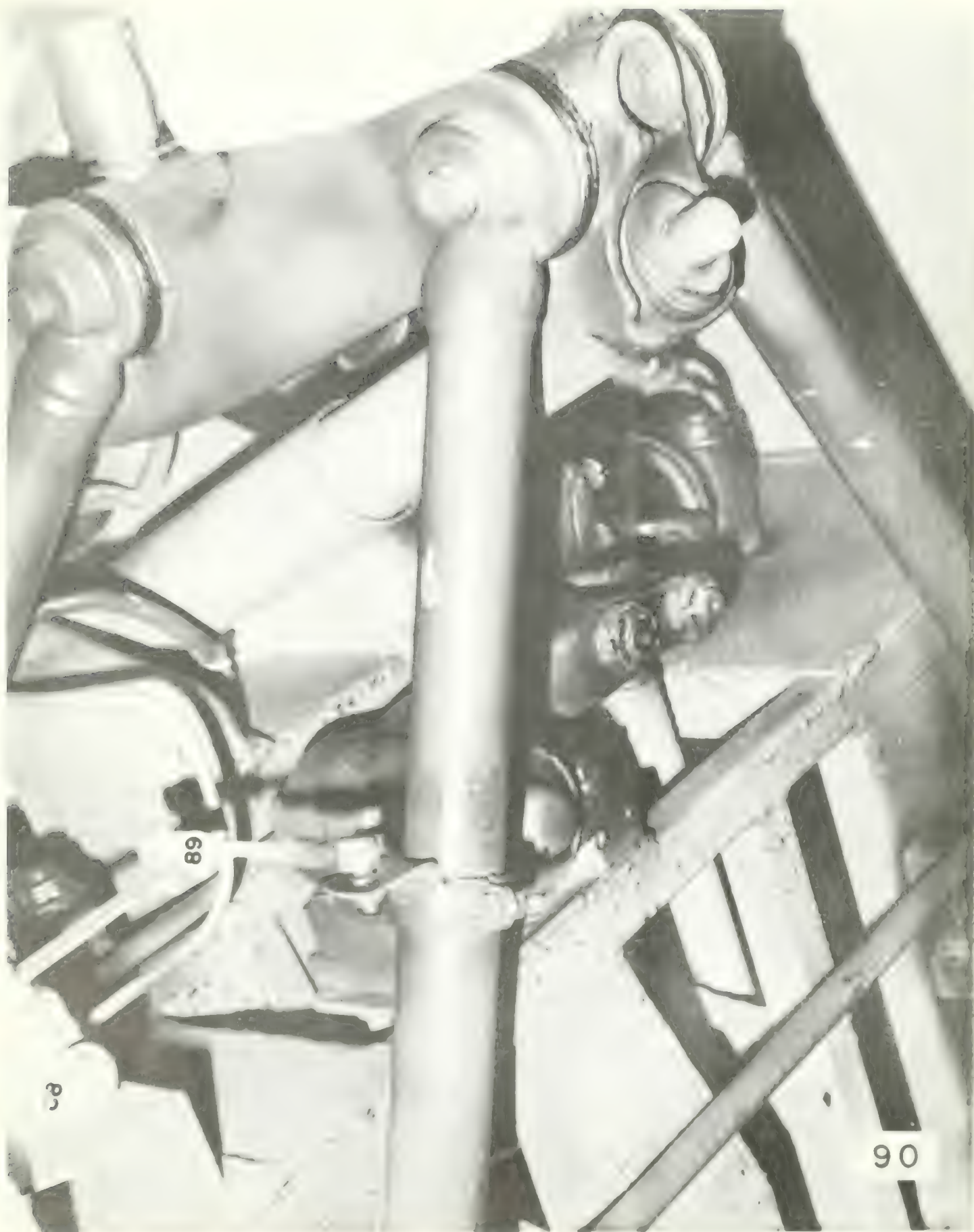








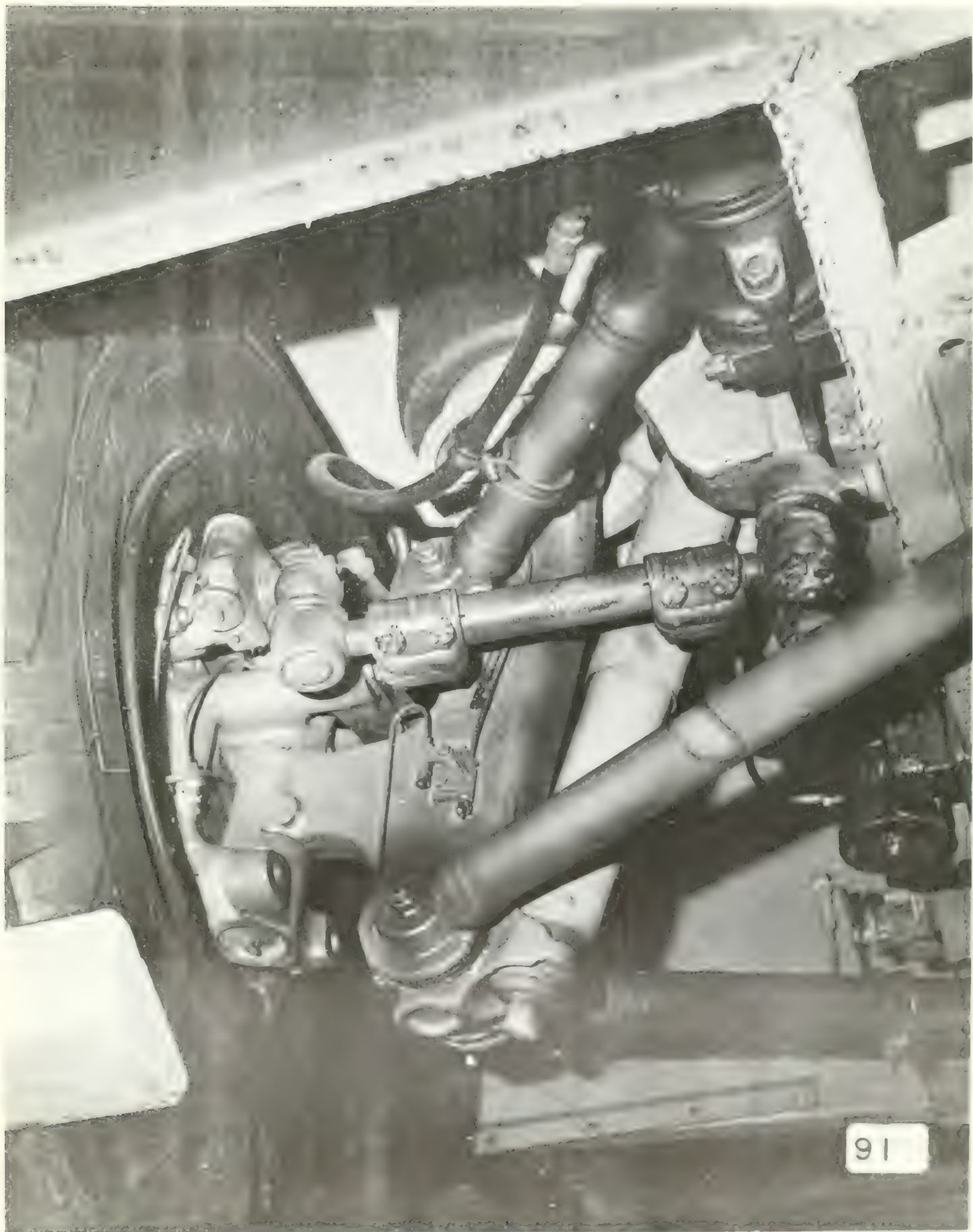


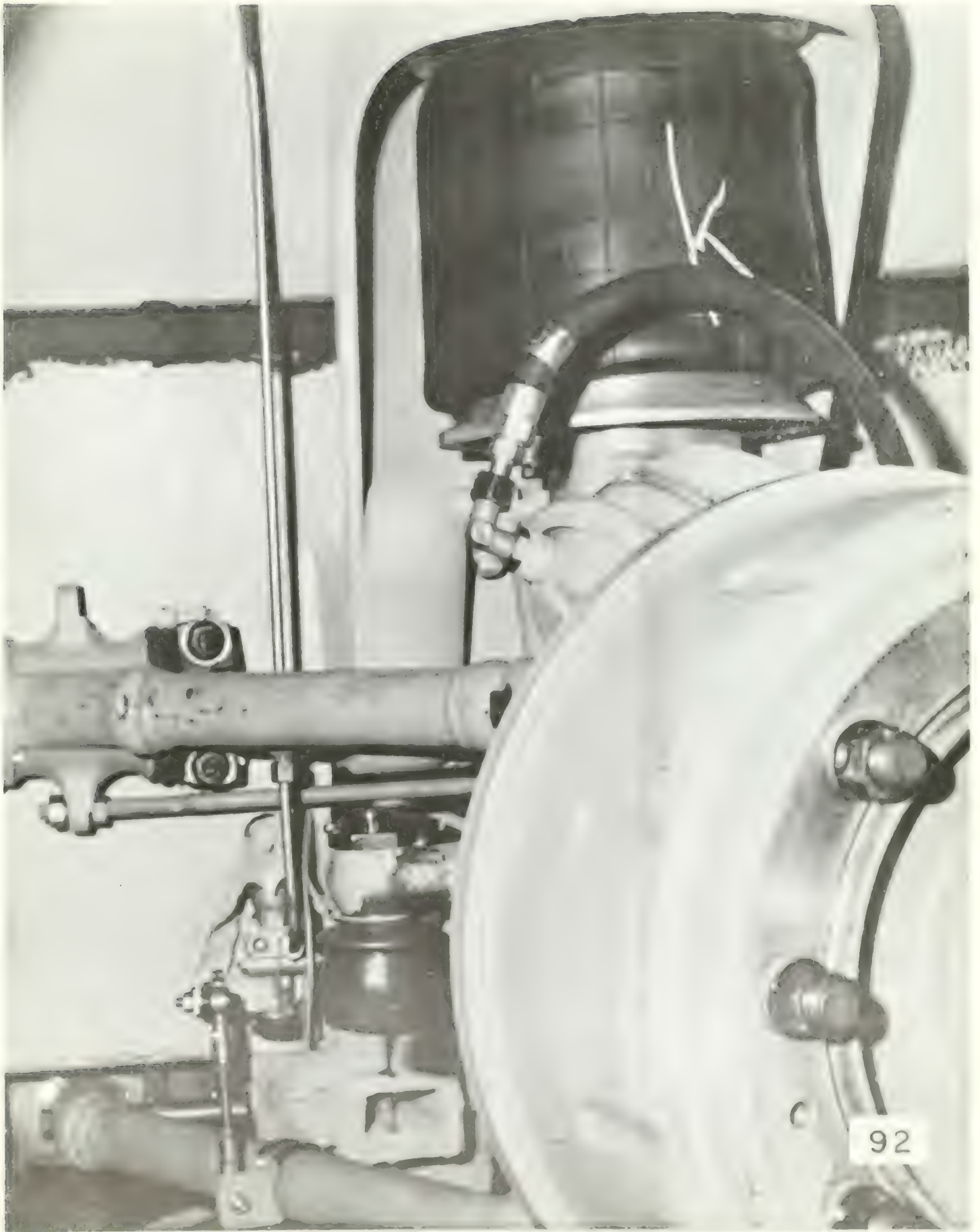


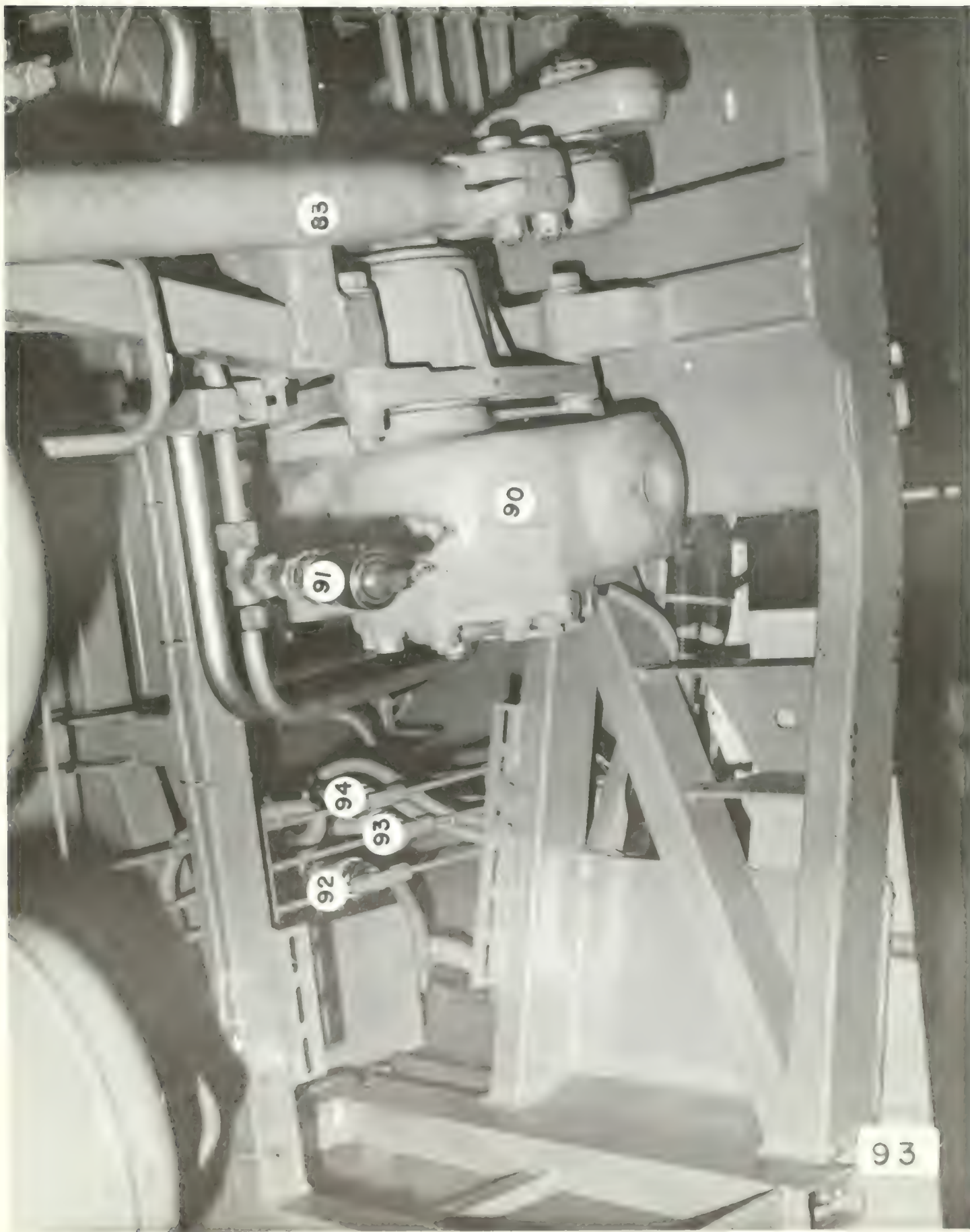
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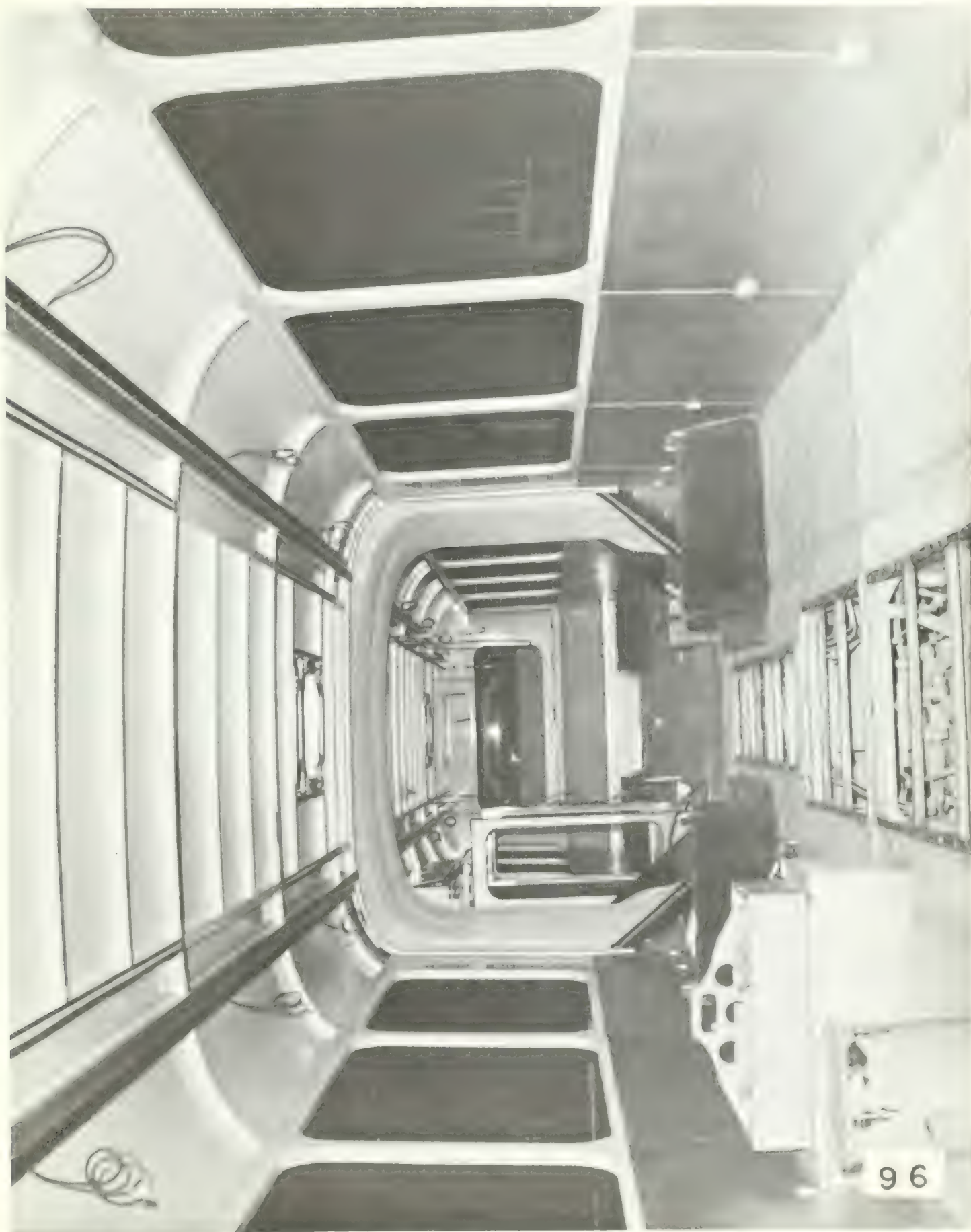






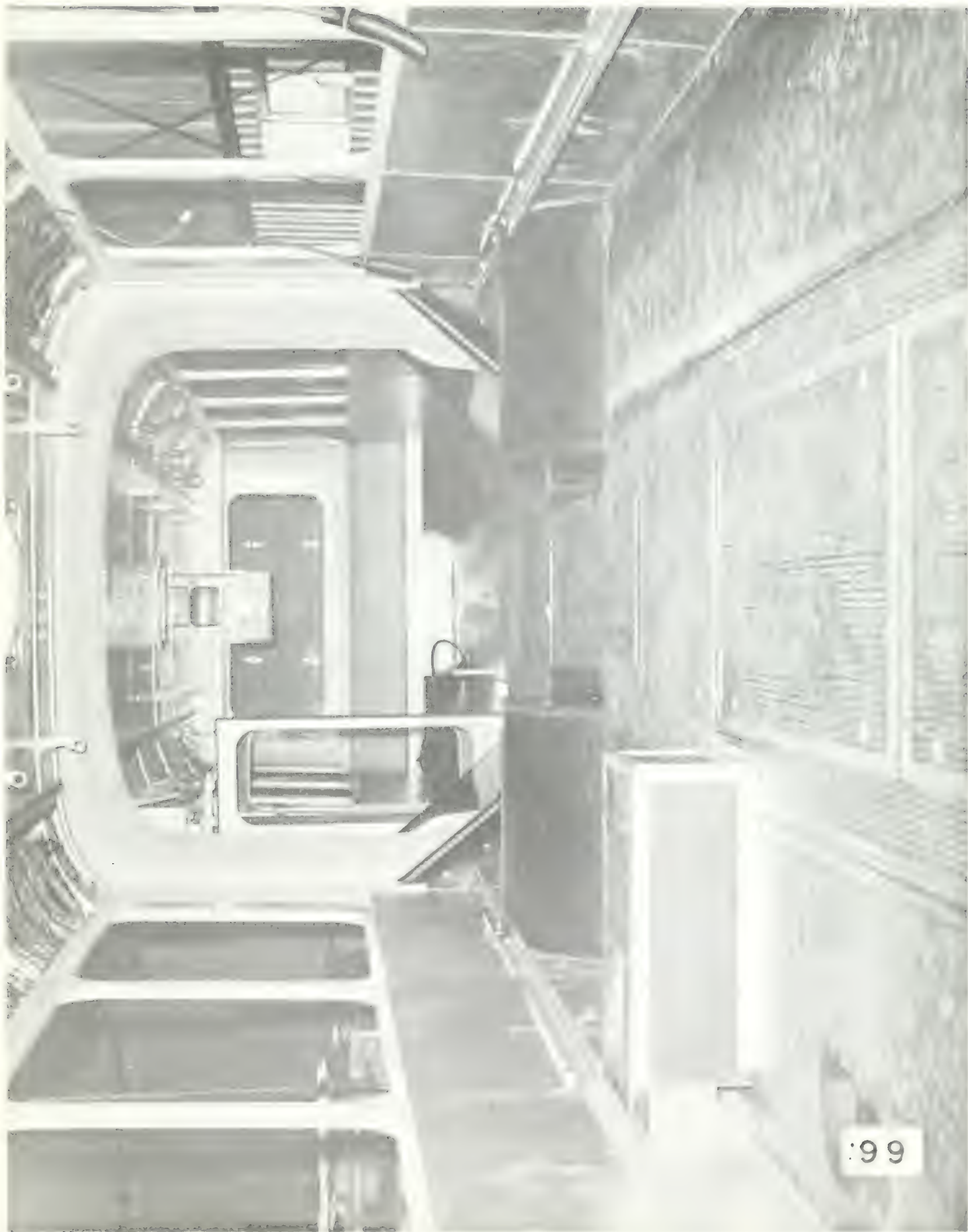












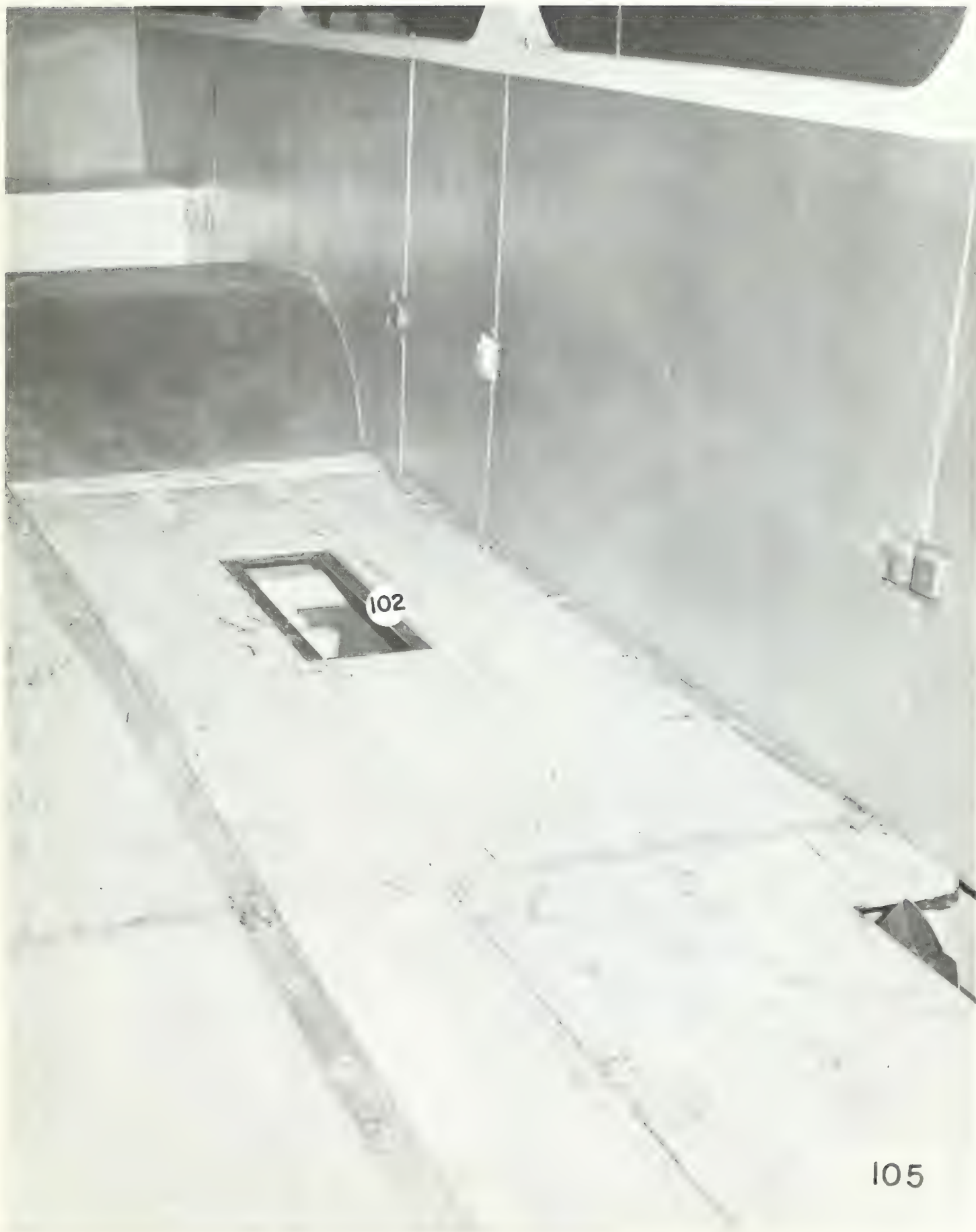








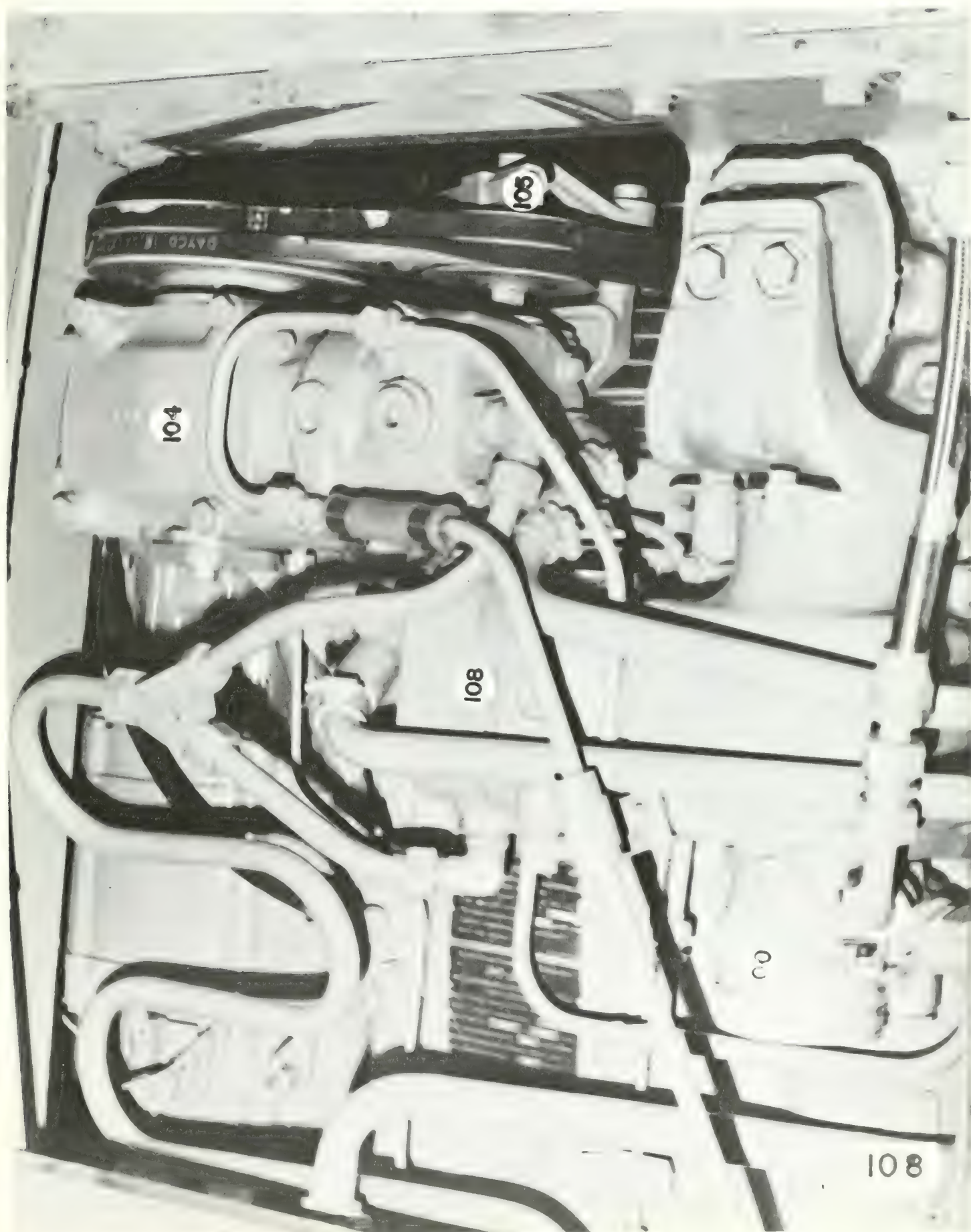


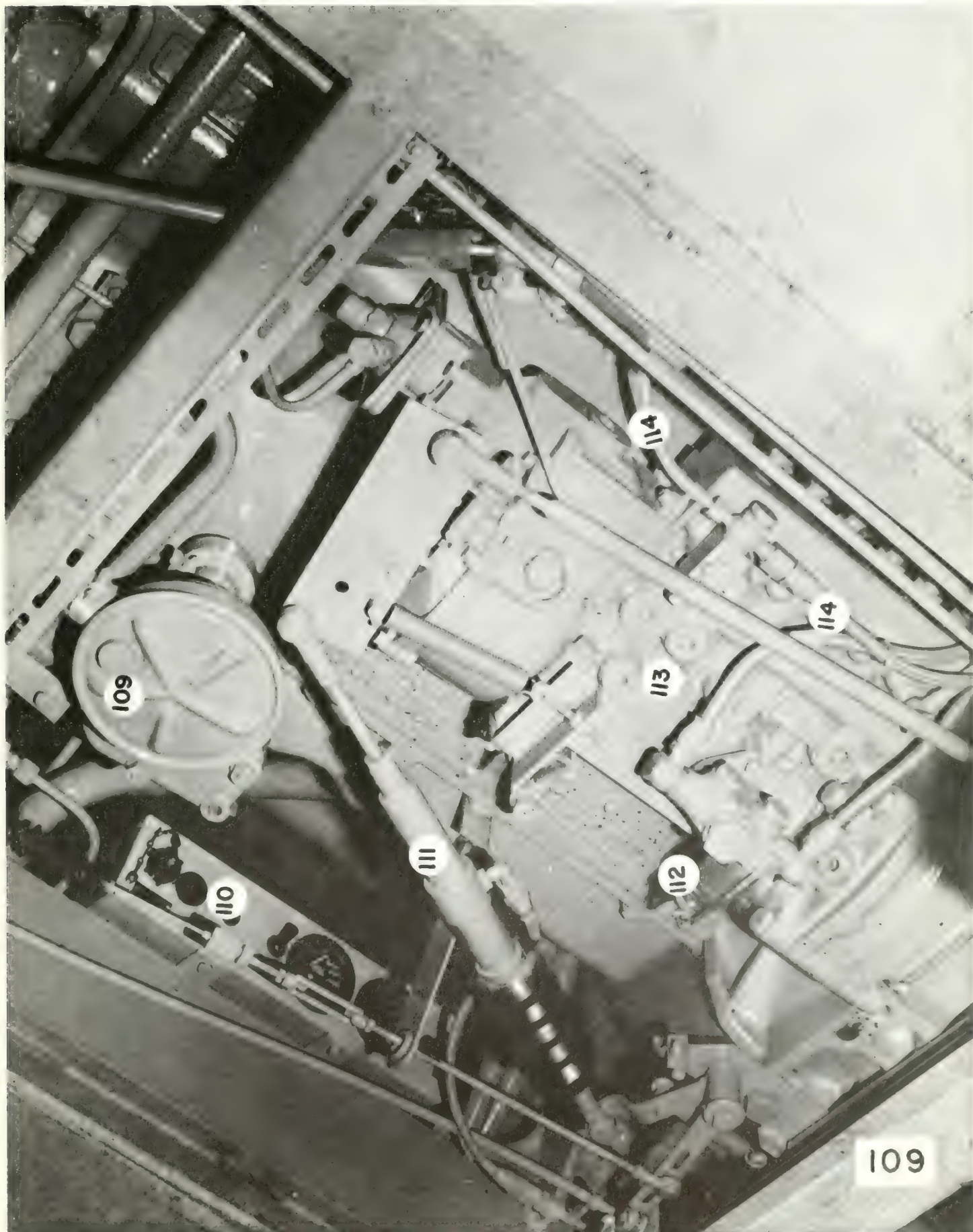




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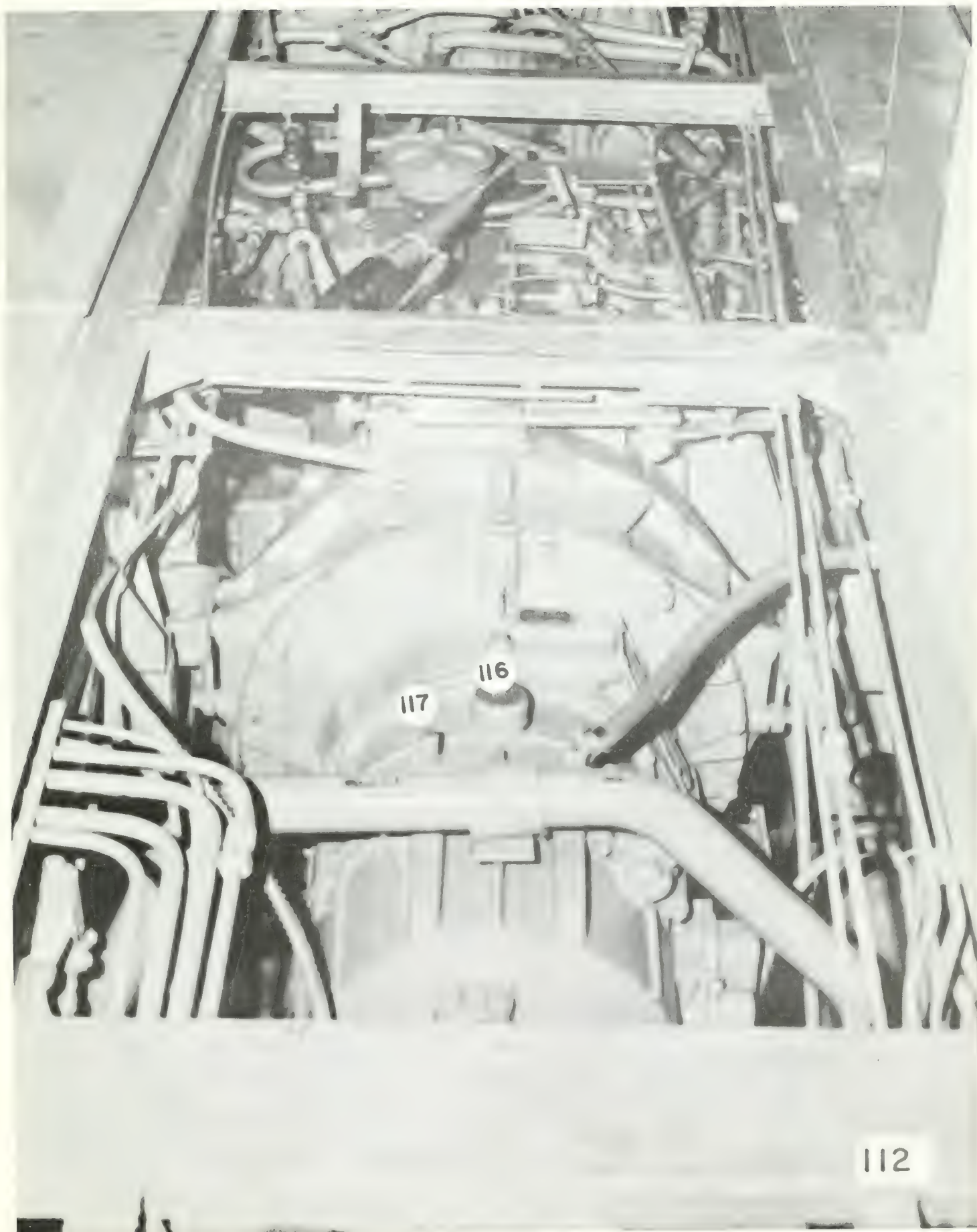


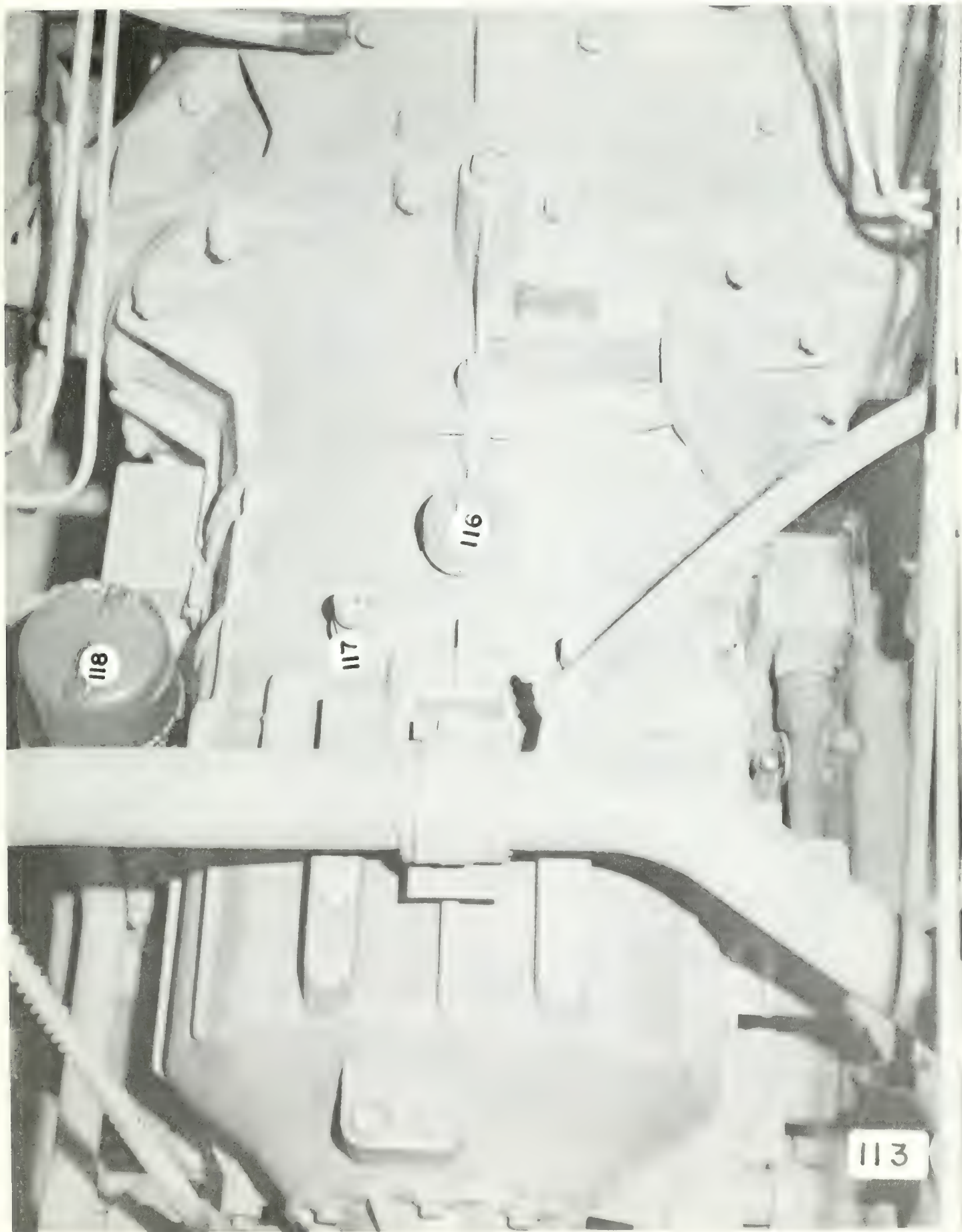


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110

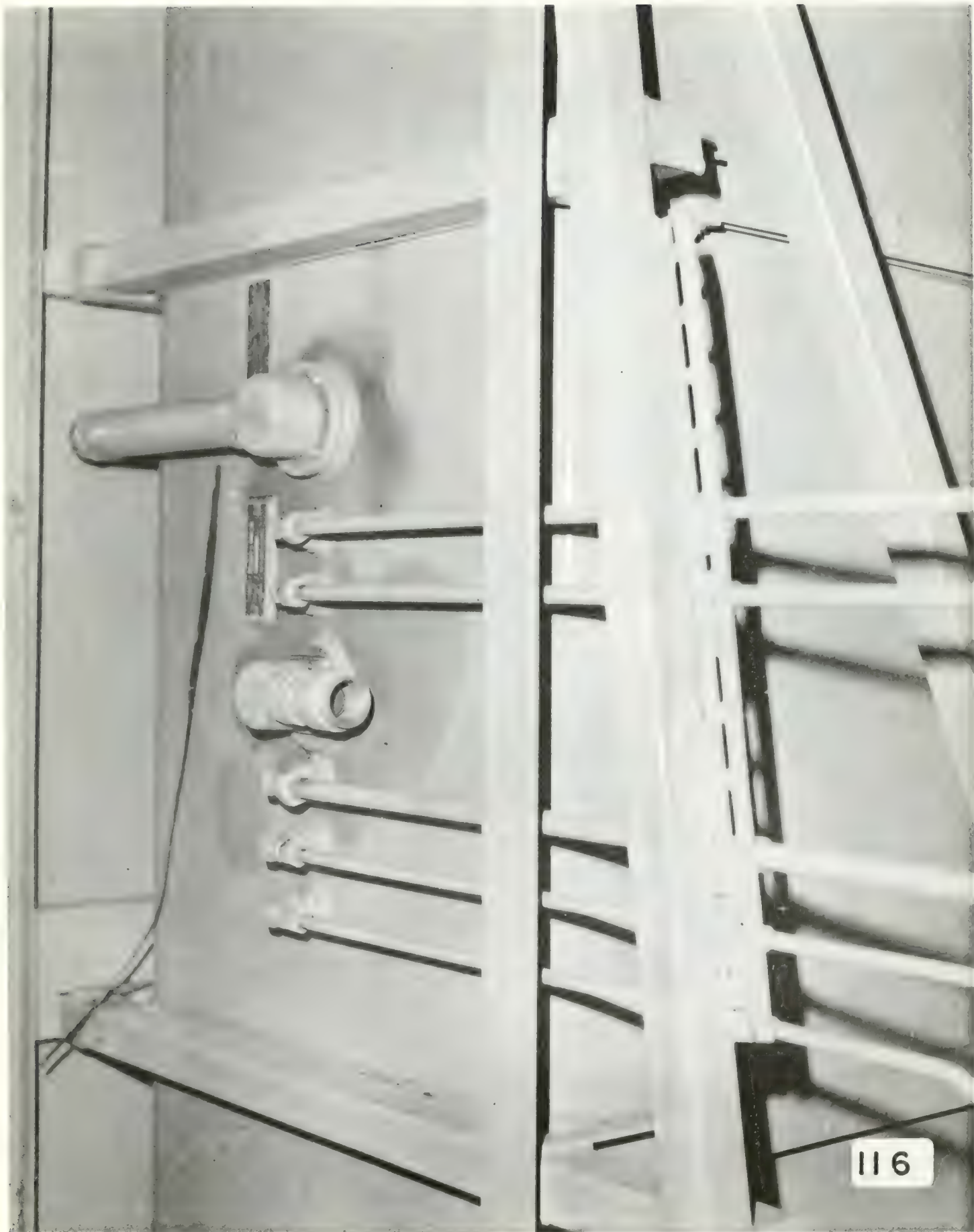


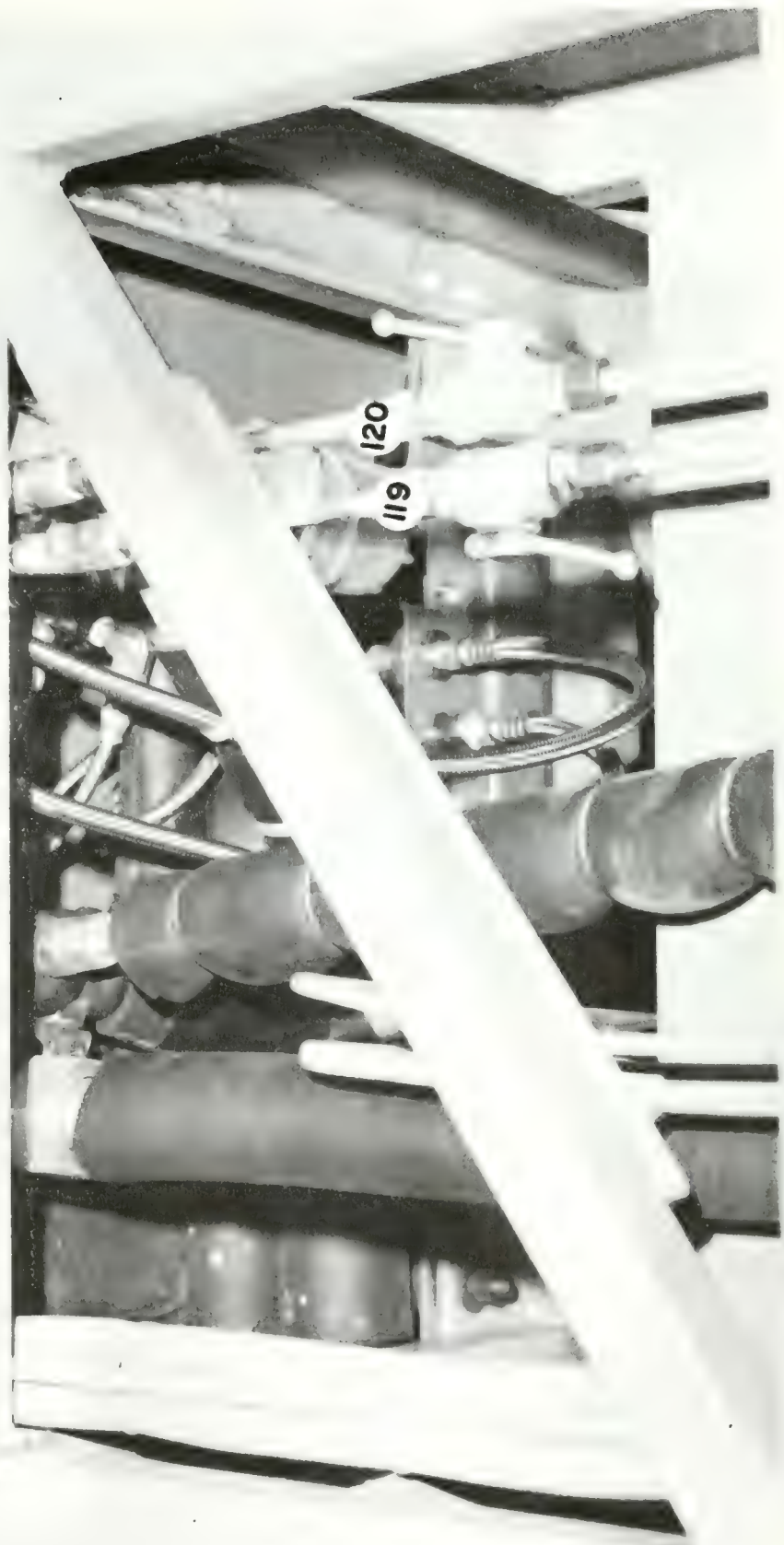






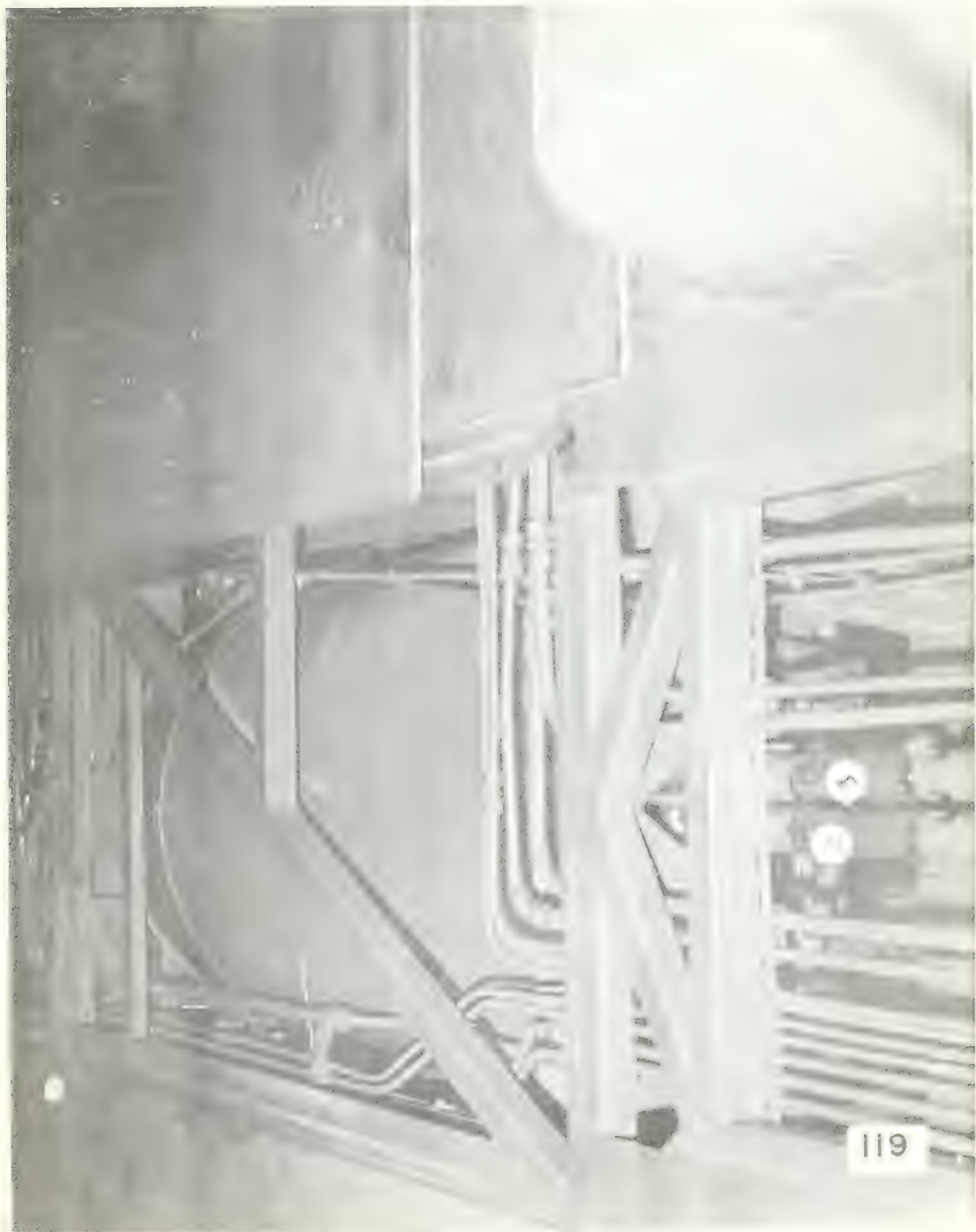




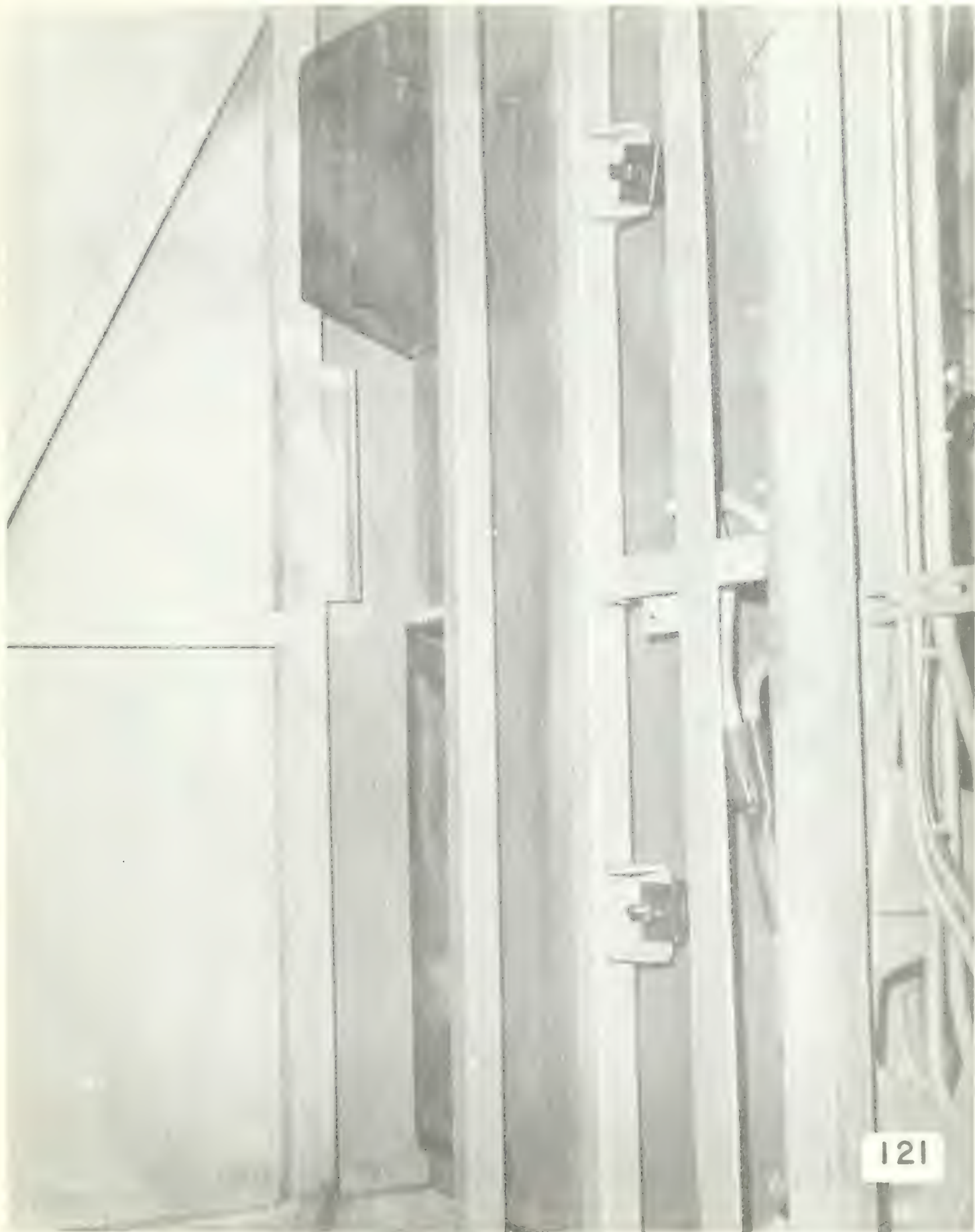


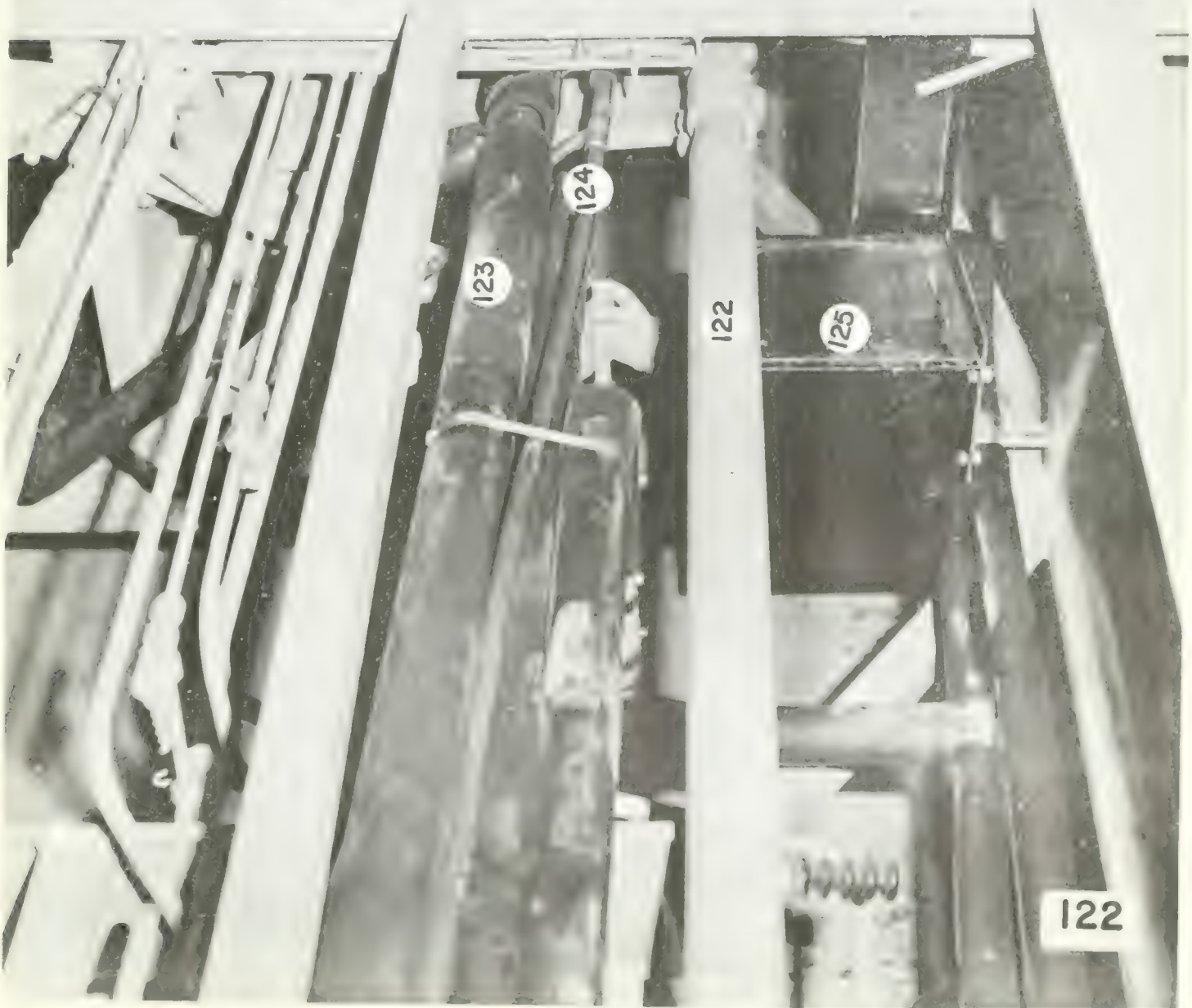
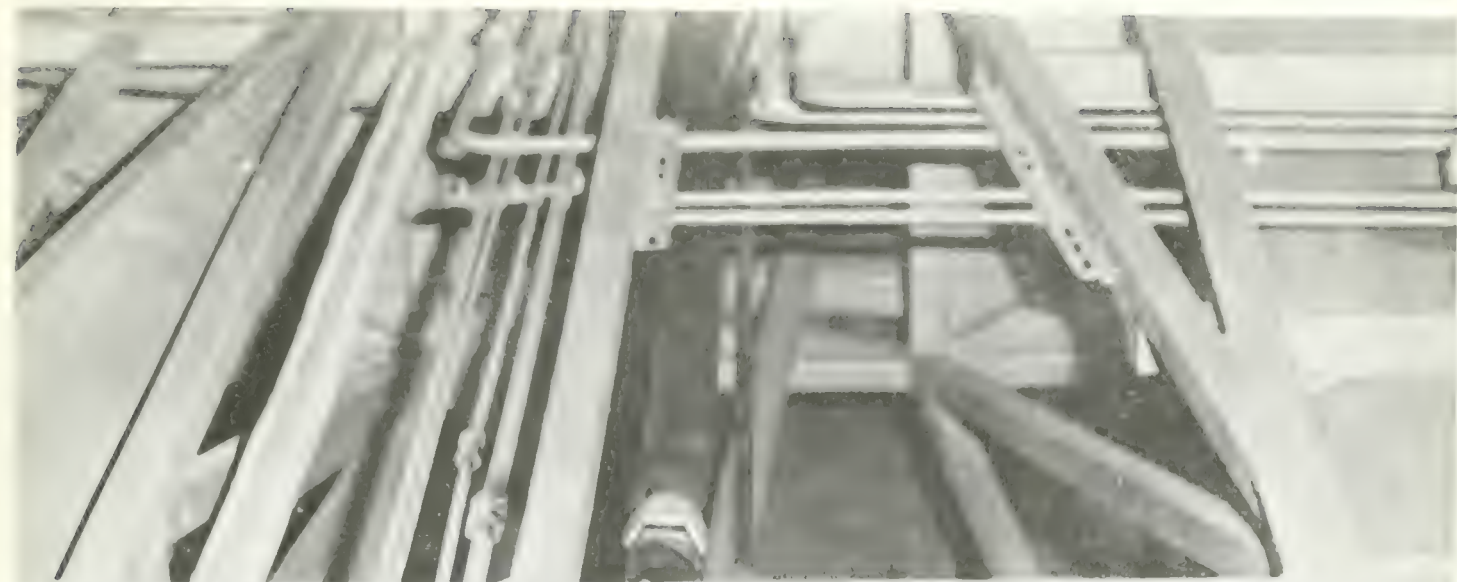
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118

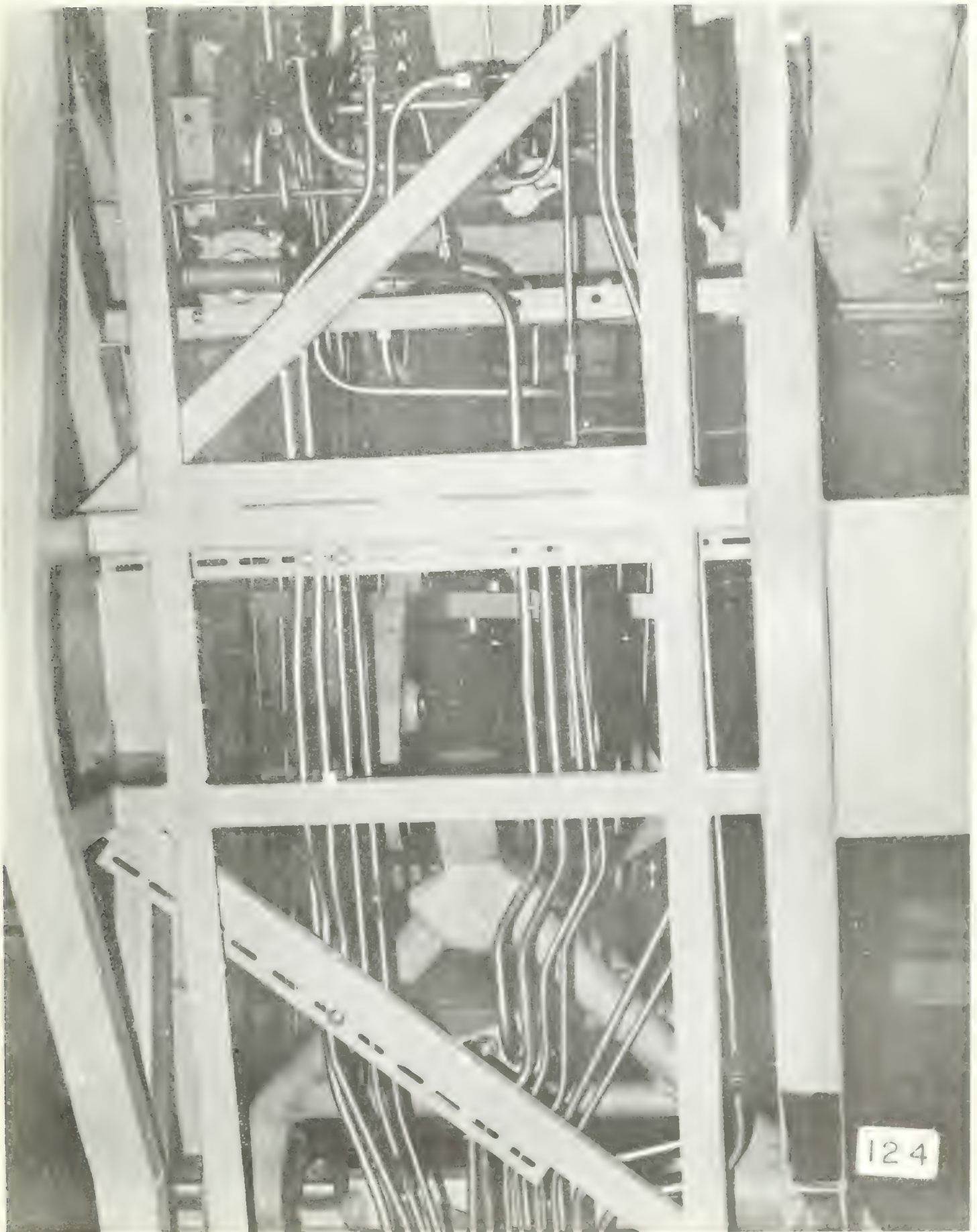


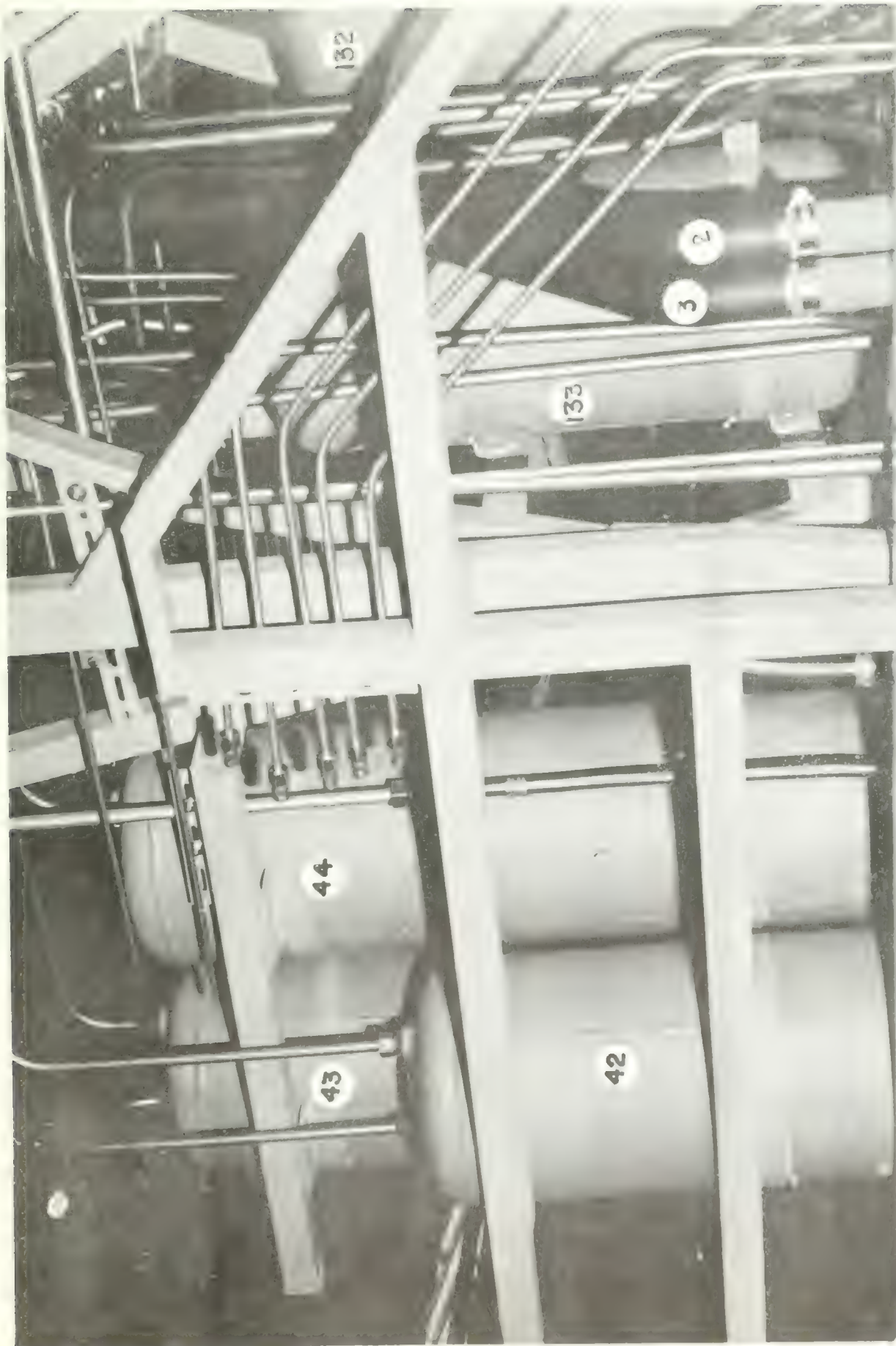


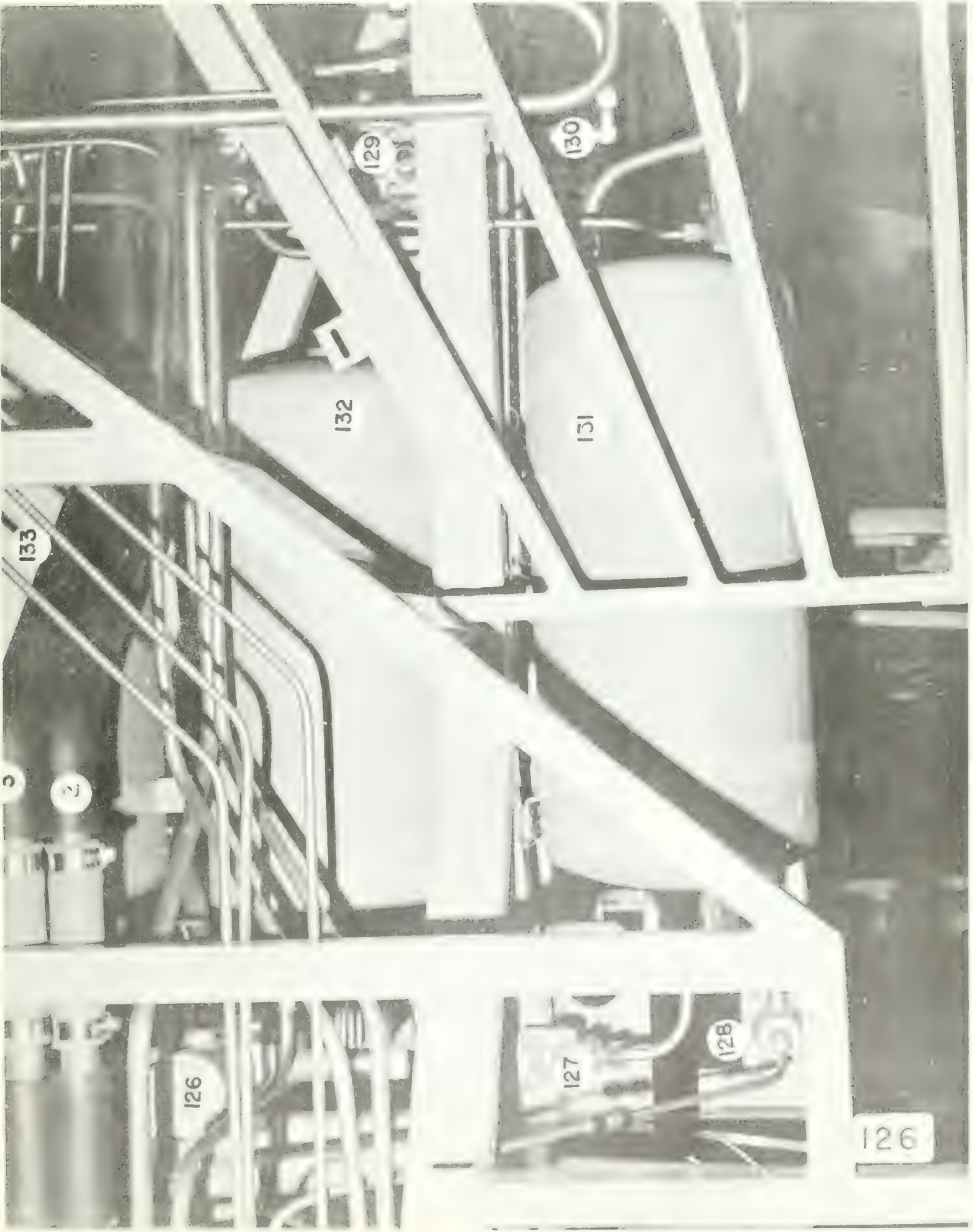












126

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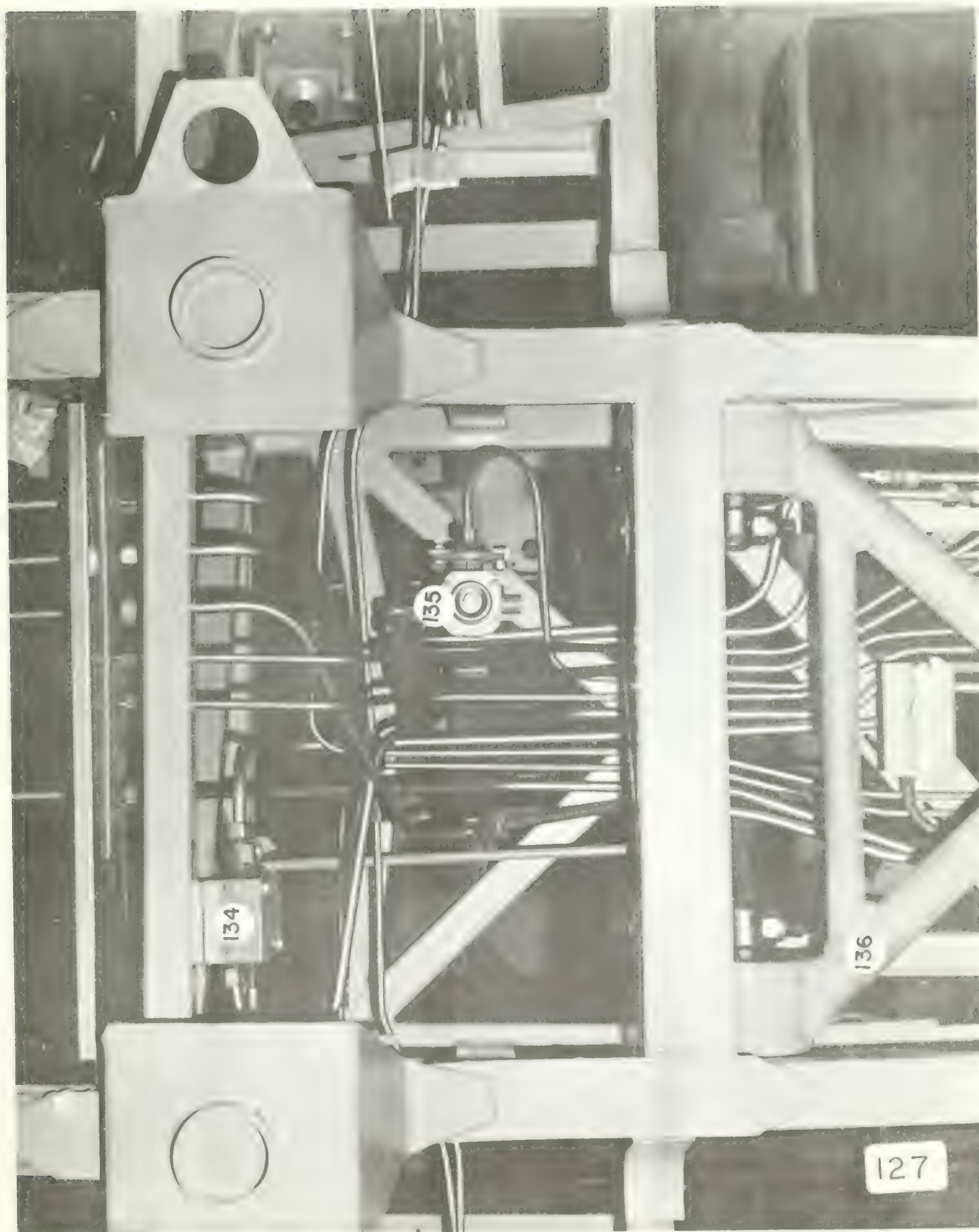
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137

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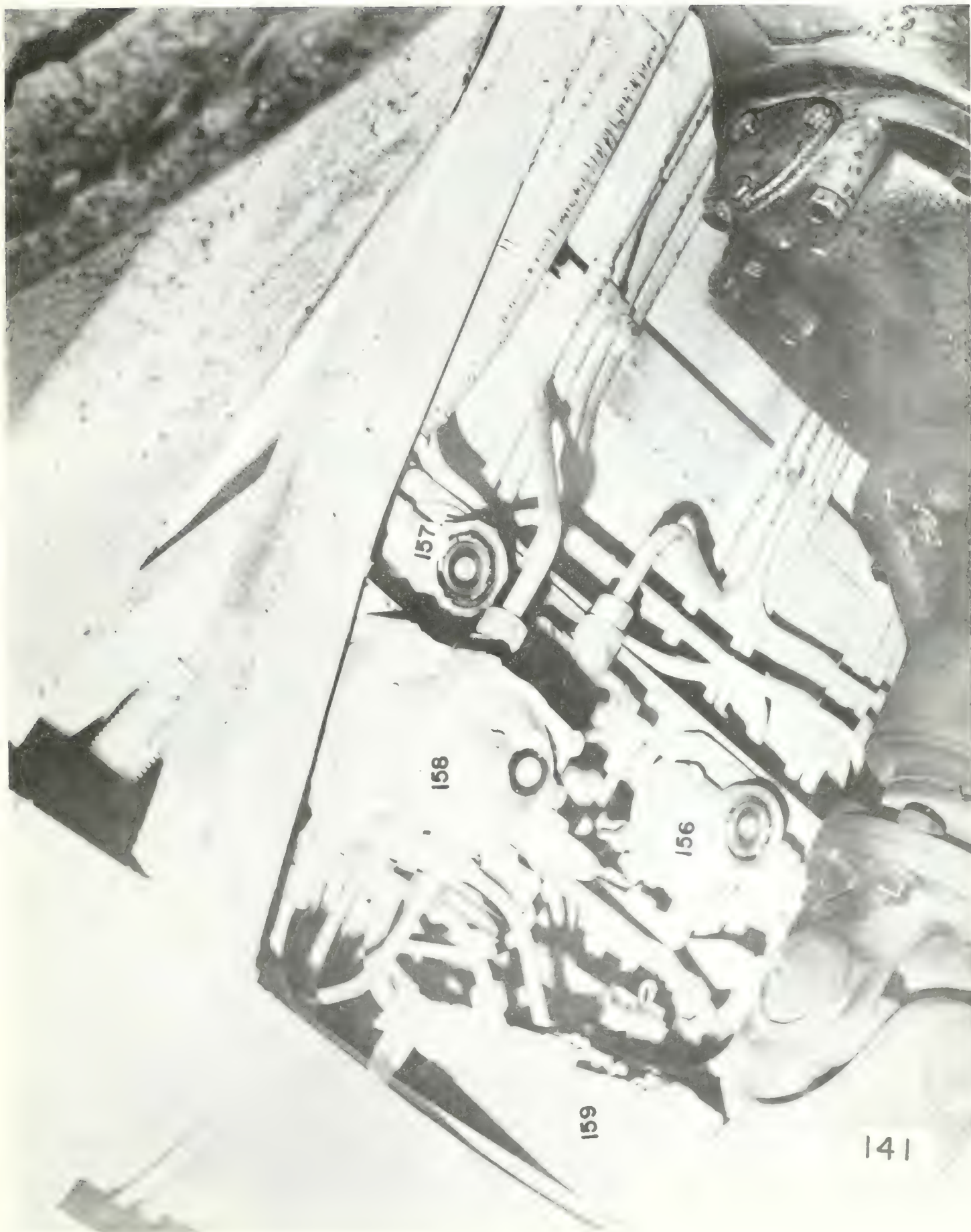
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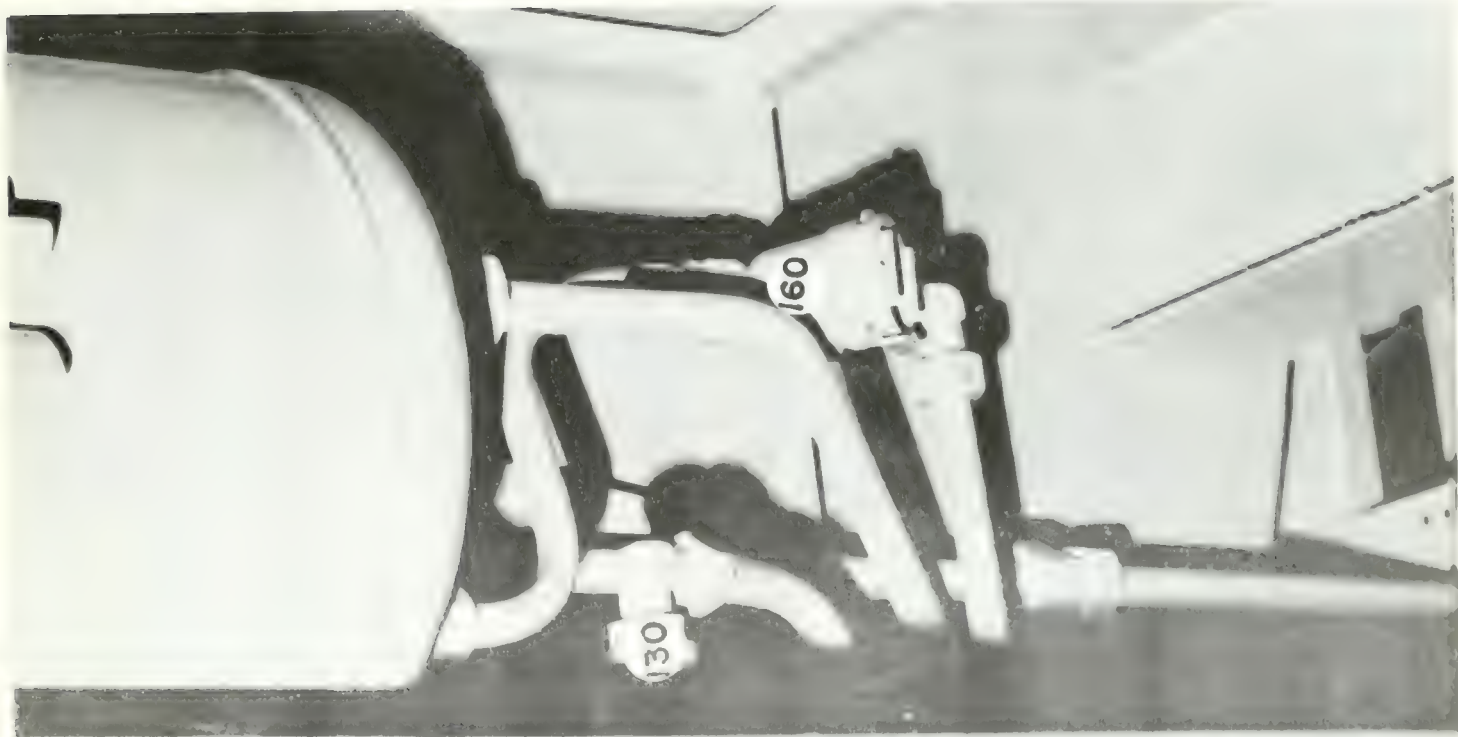


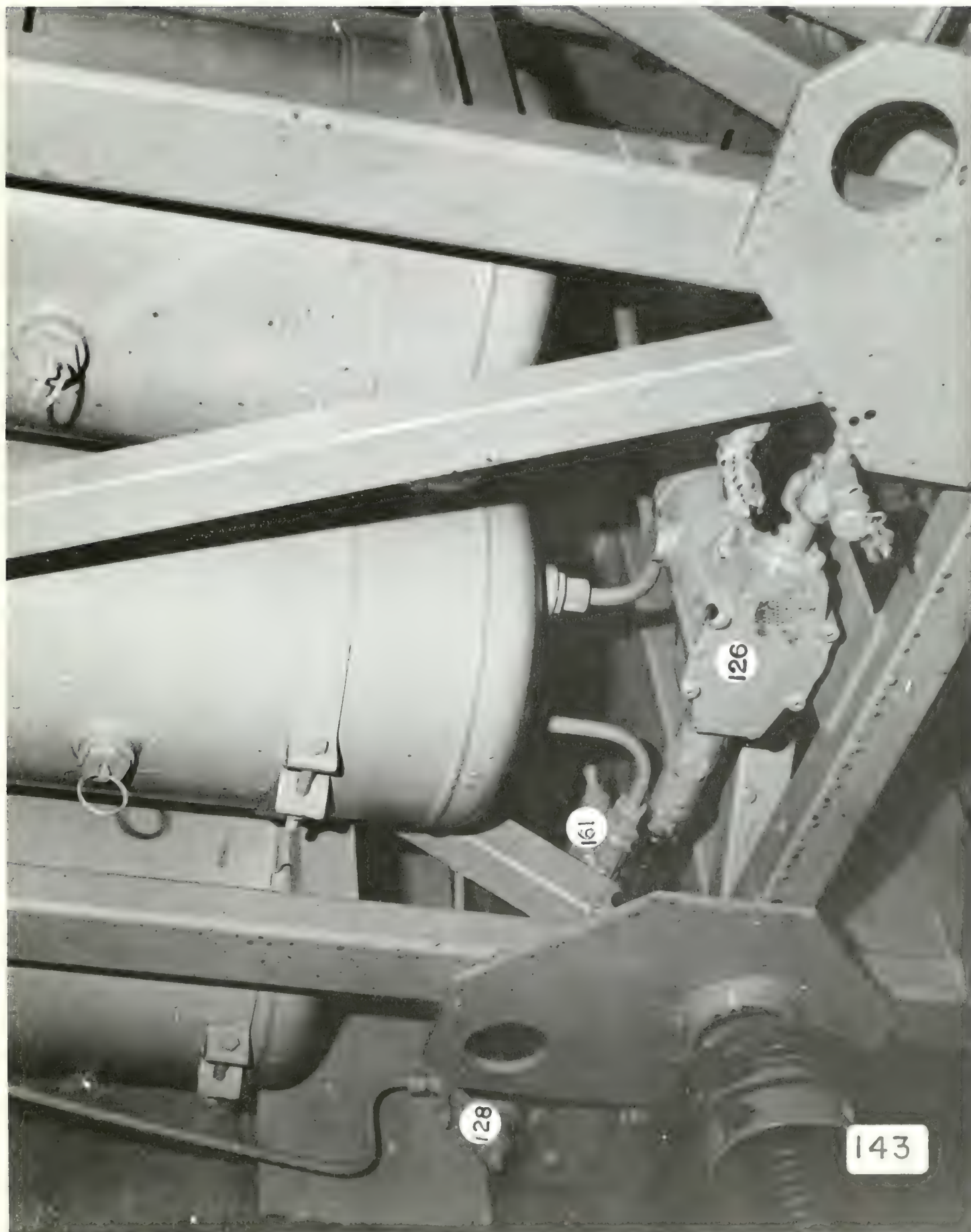


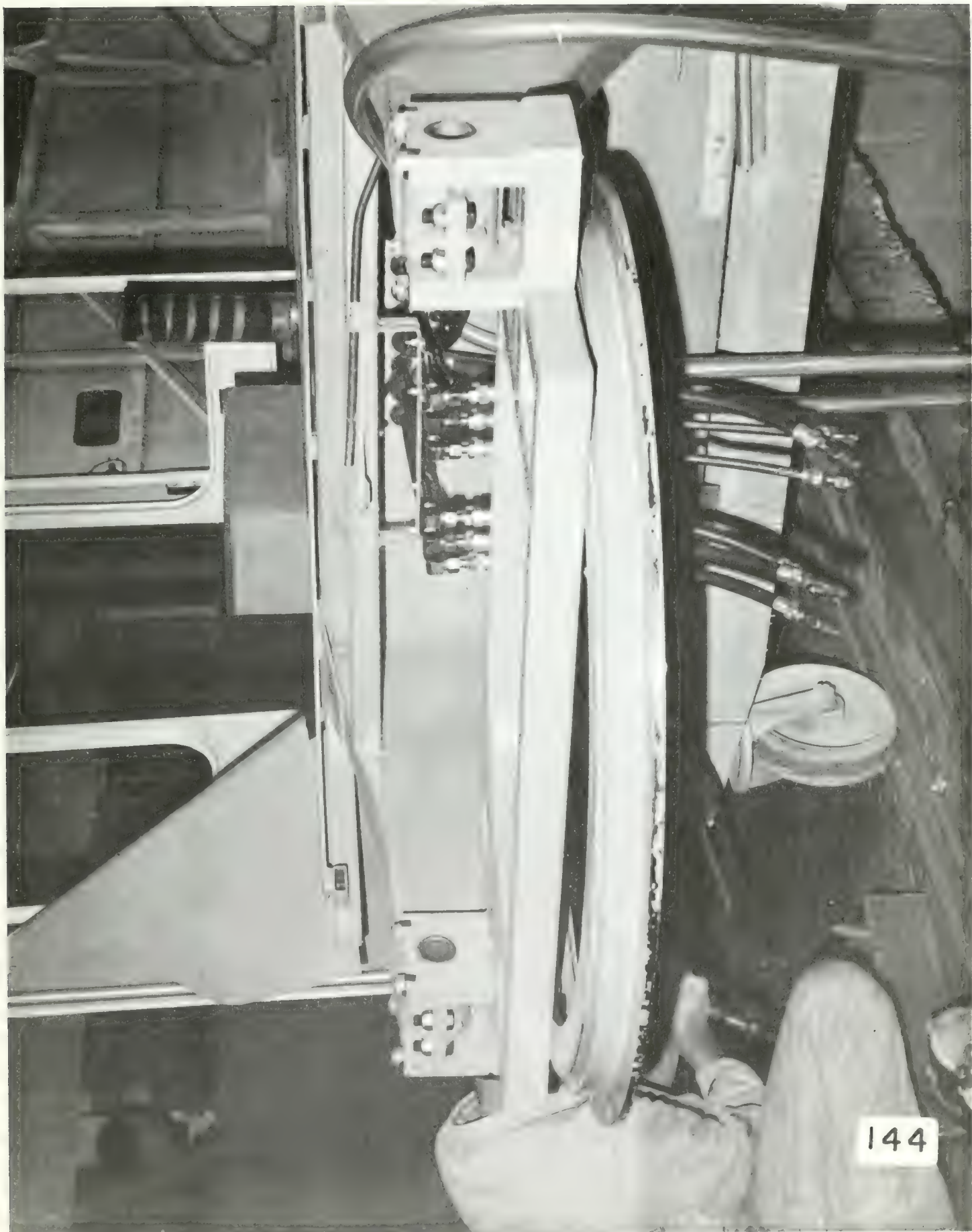




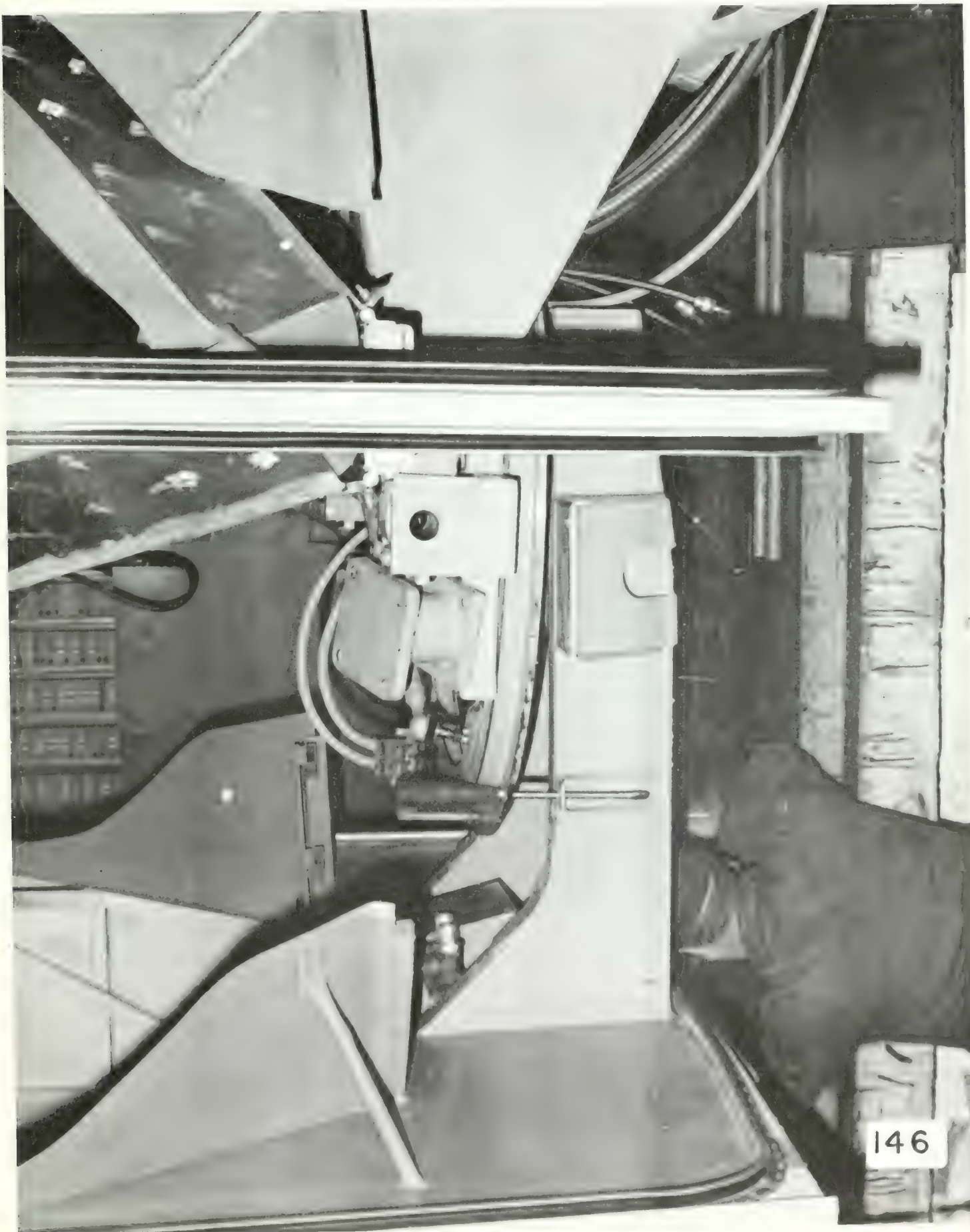






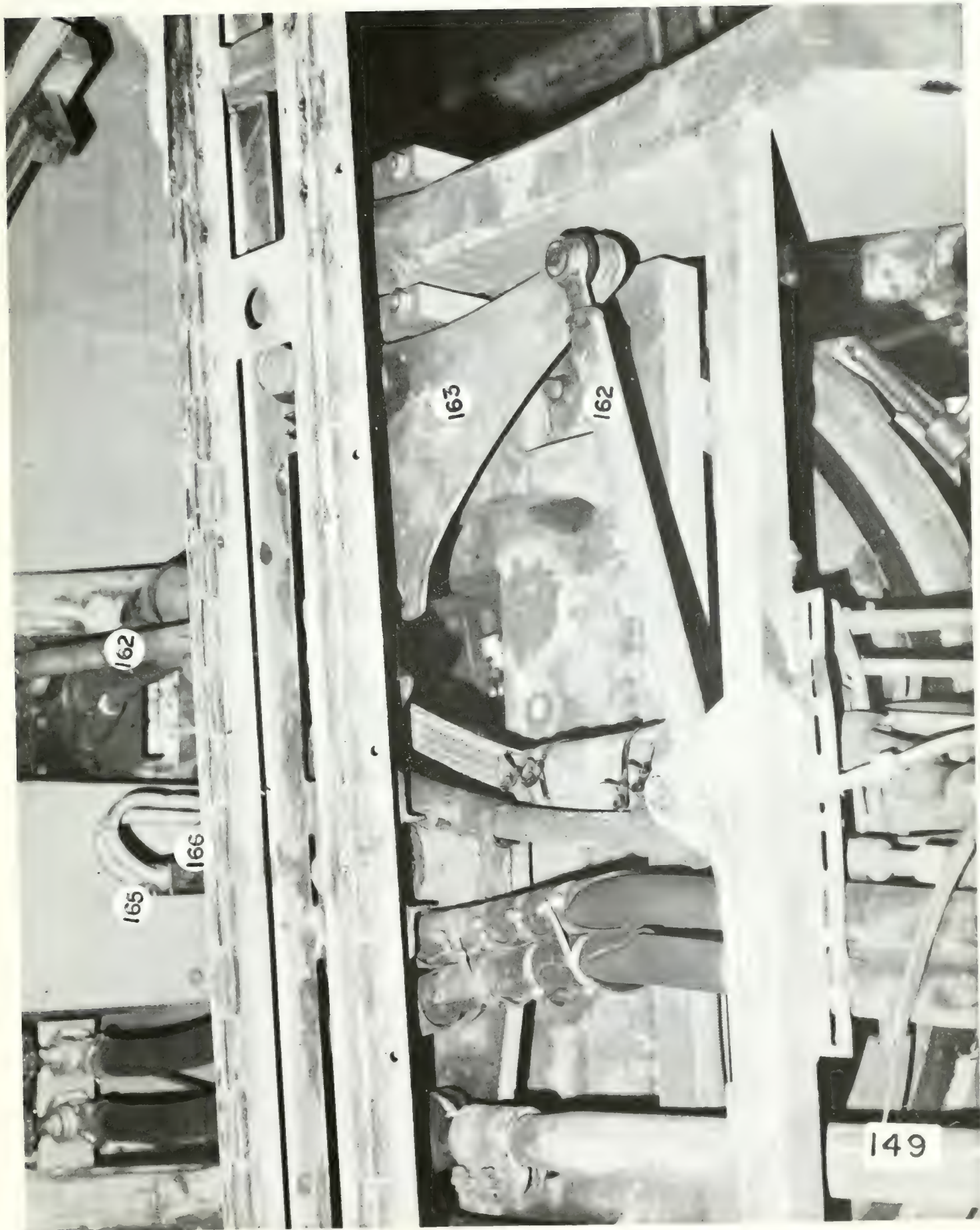






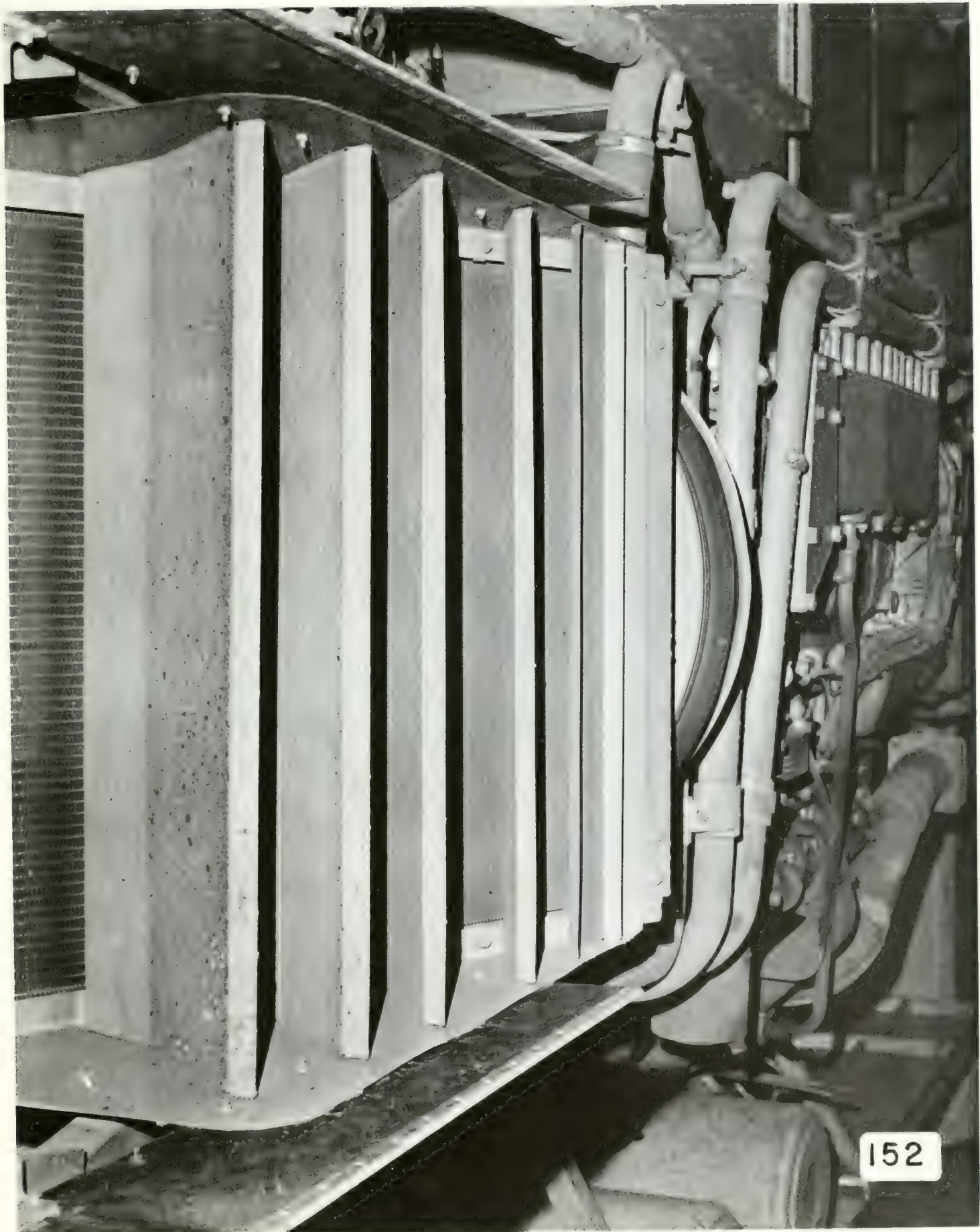


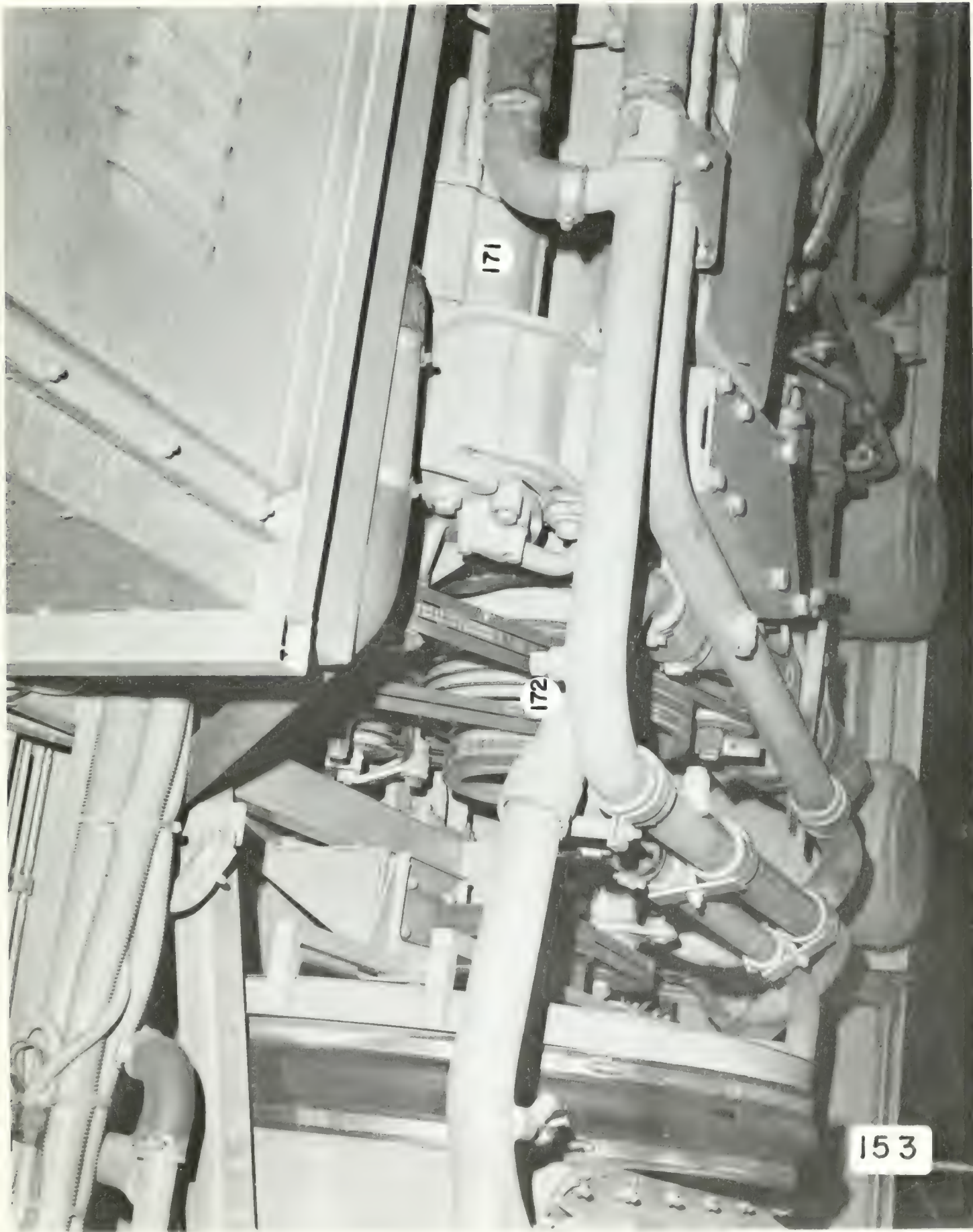


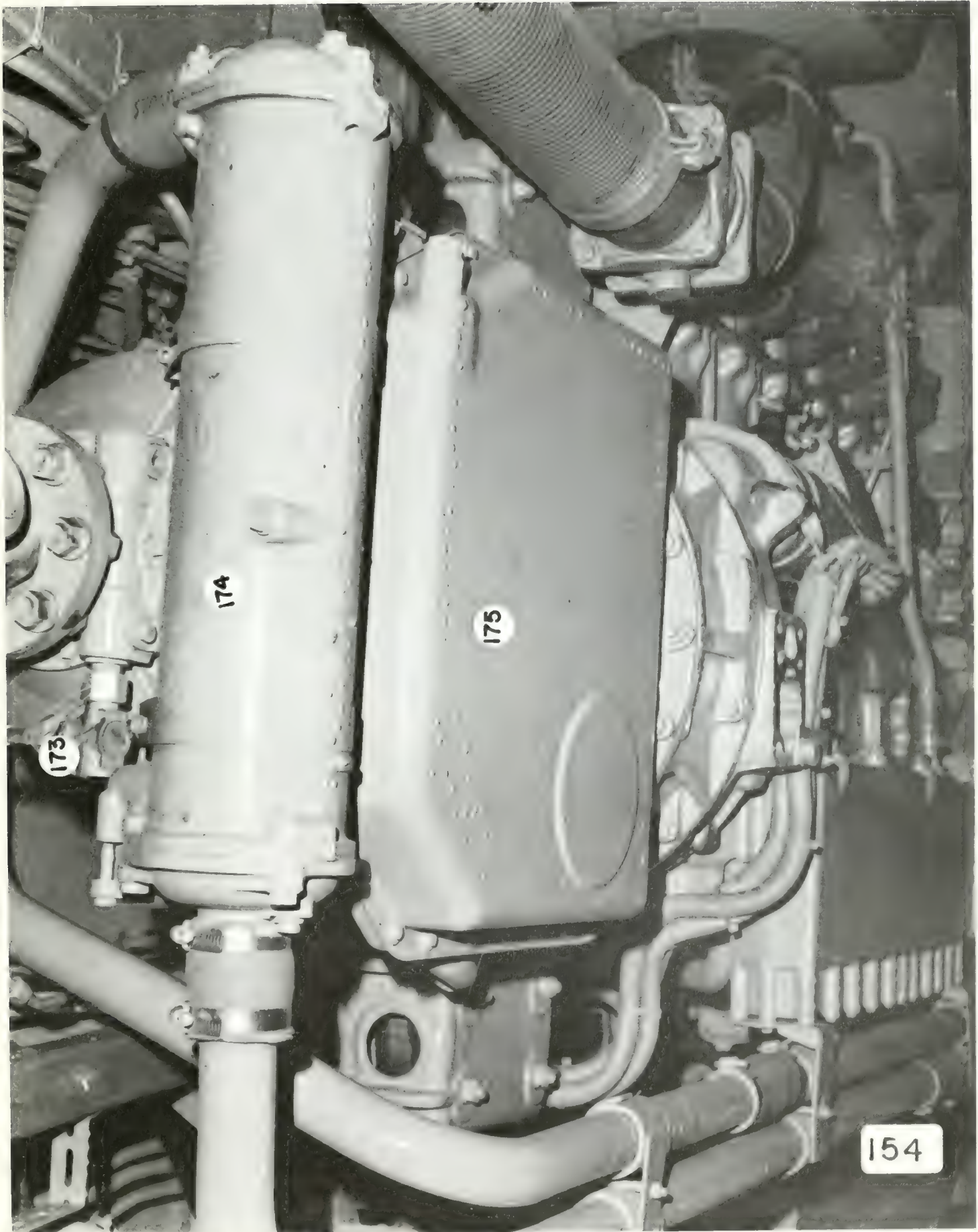


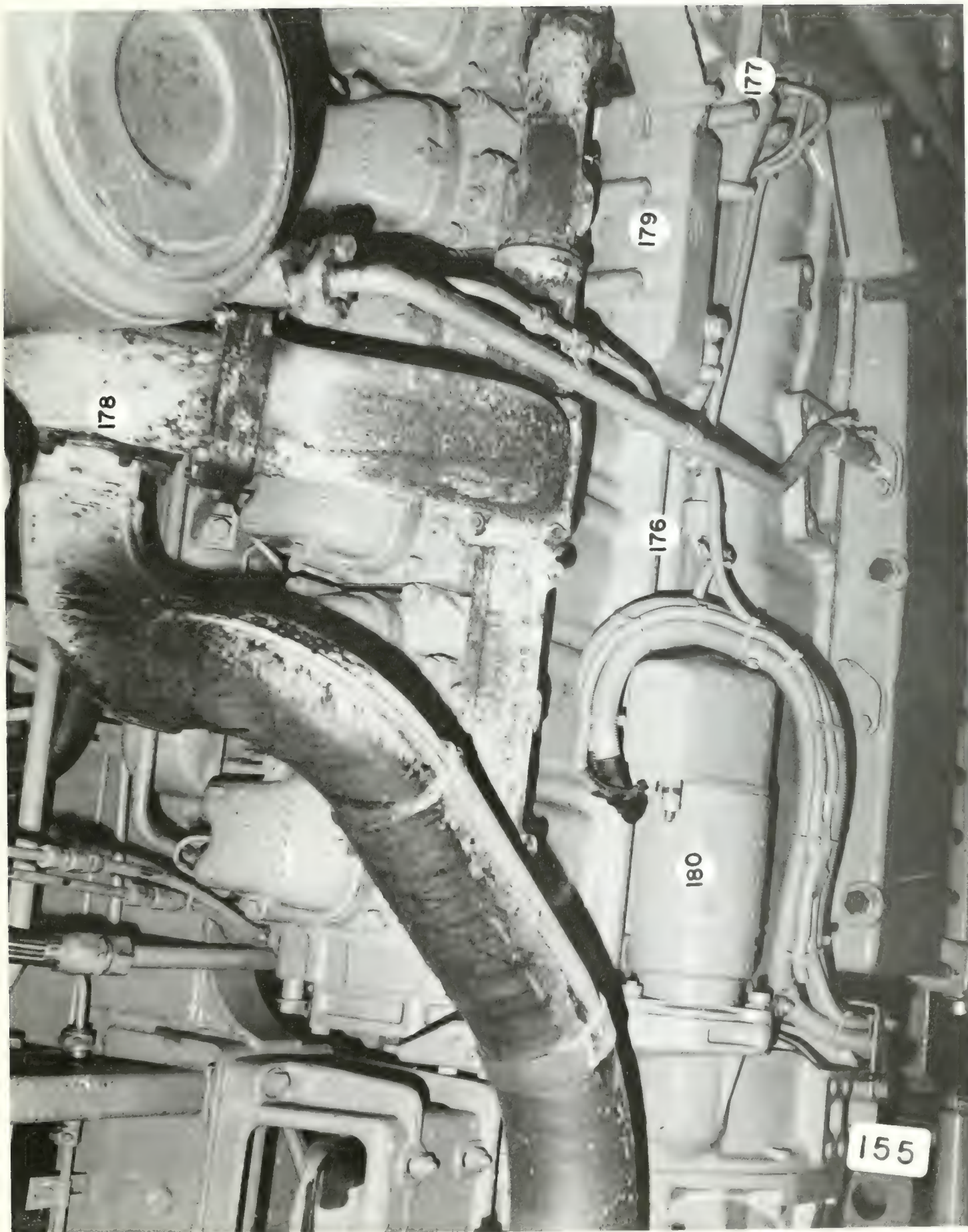


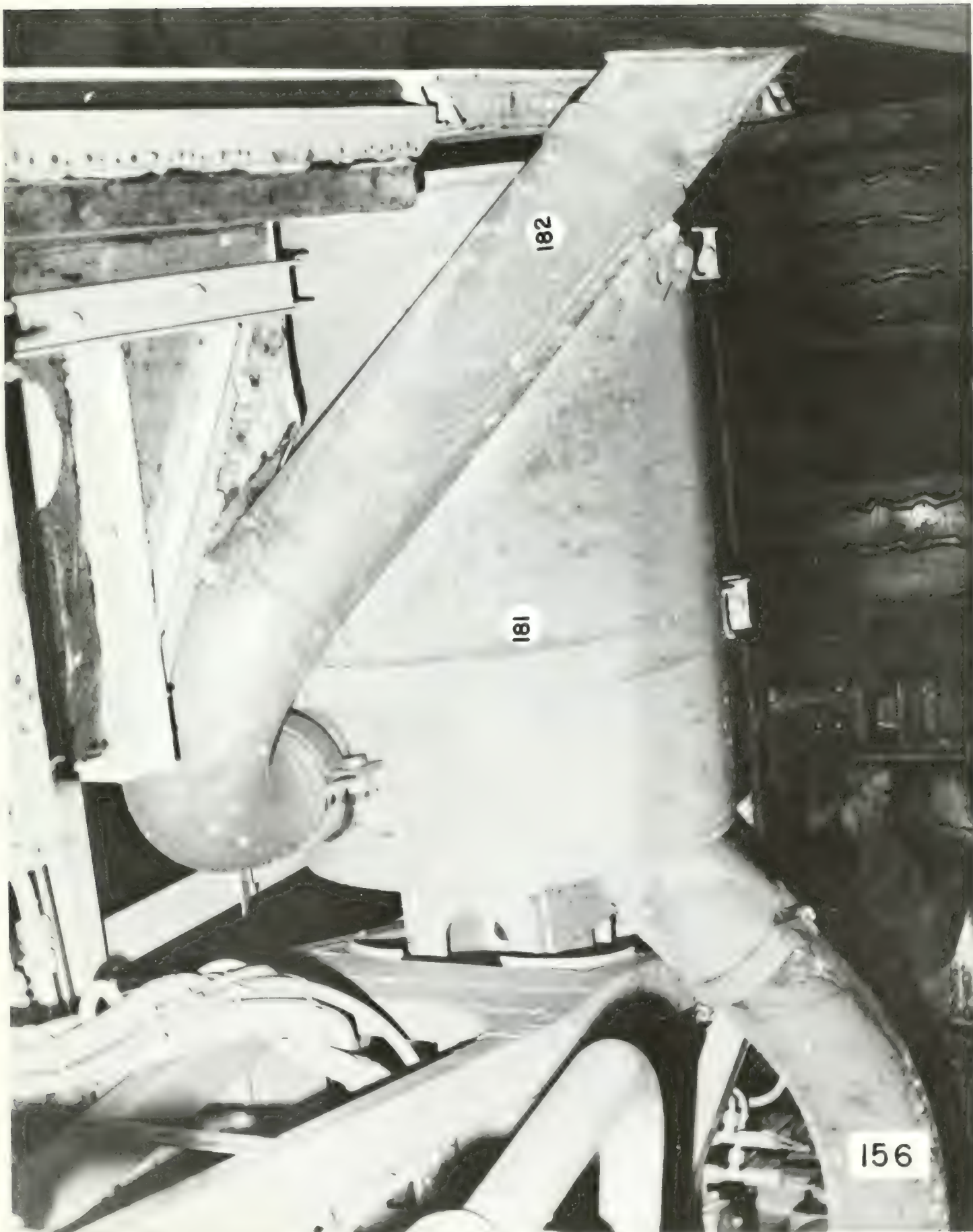


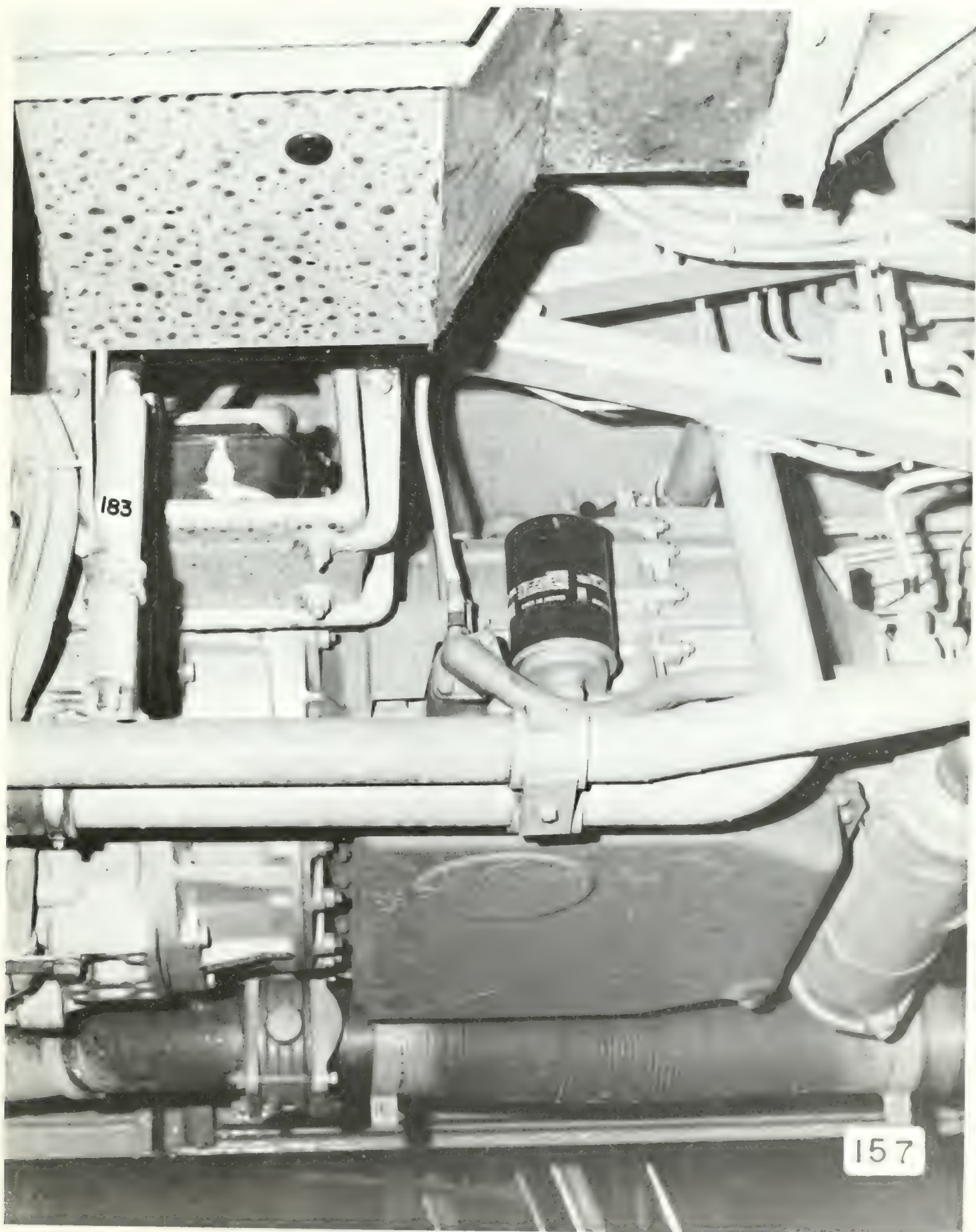


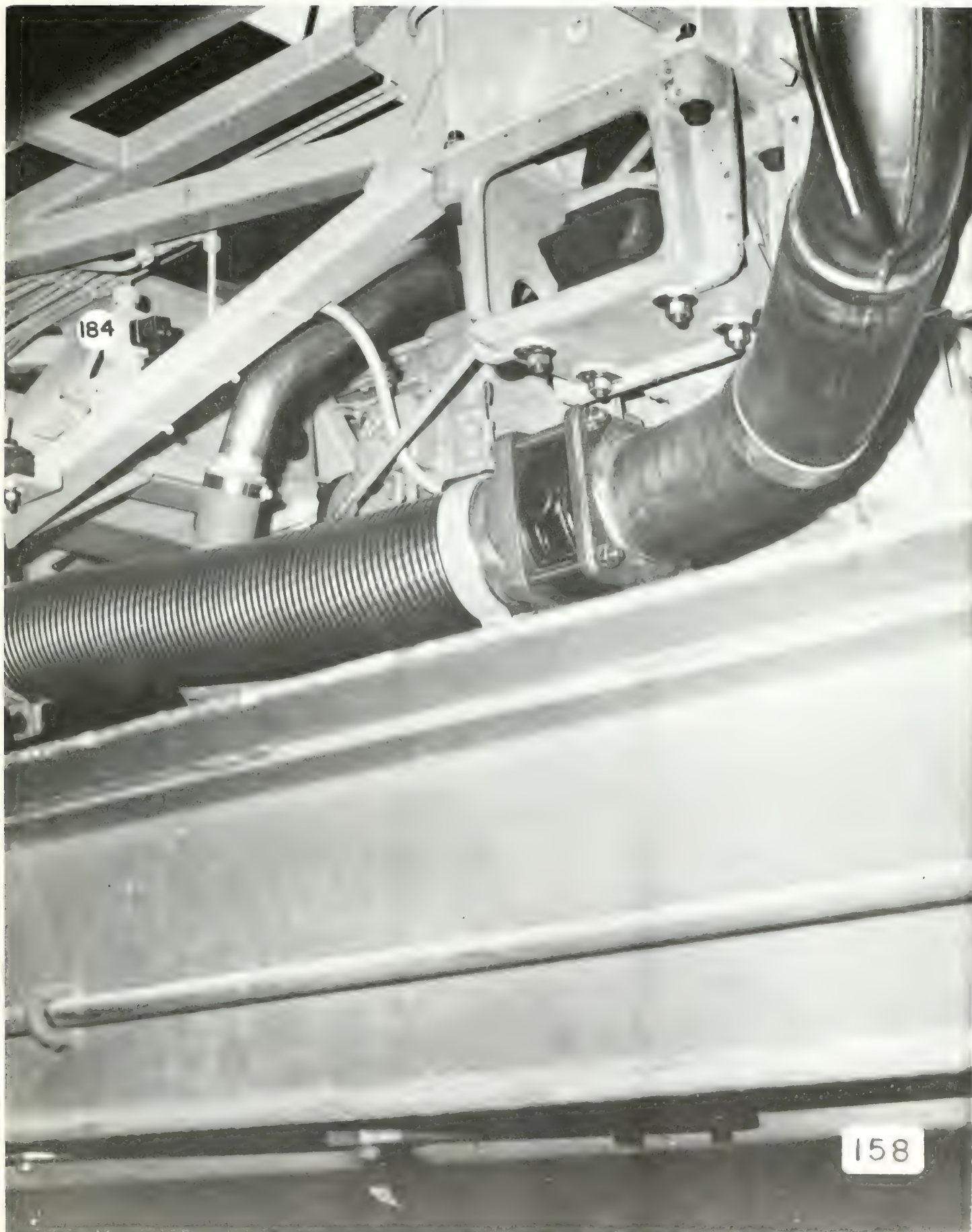


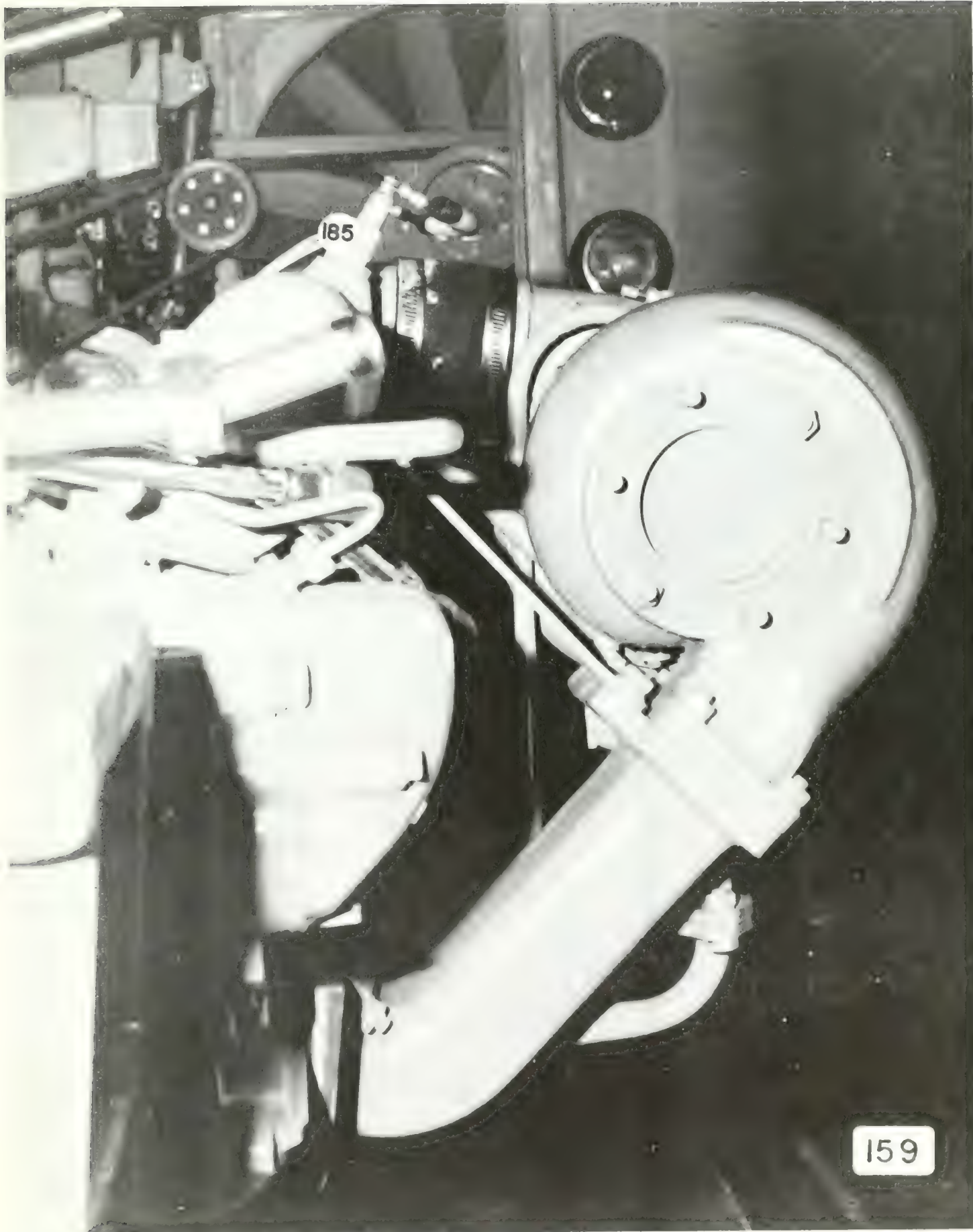


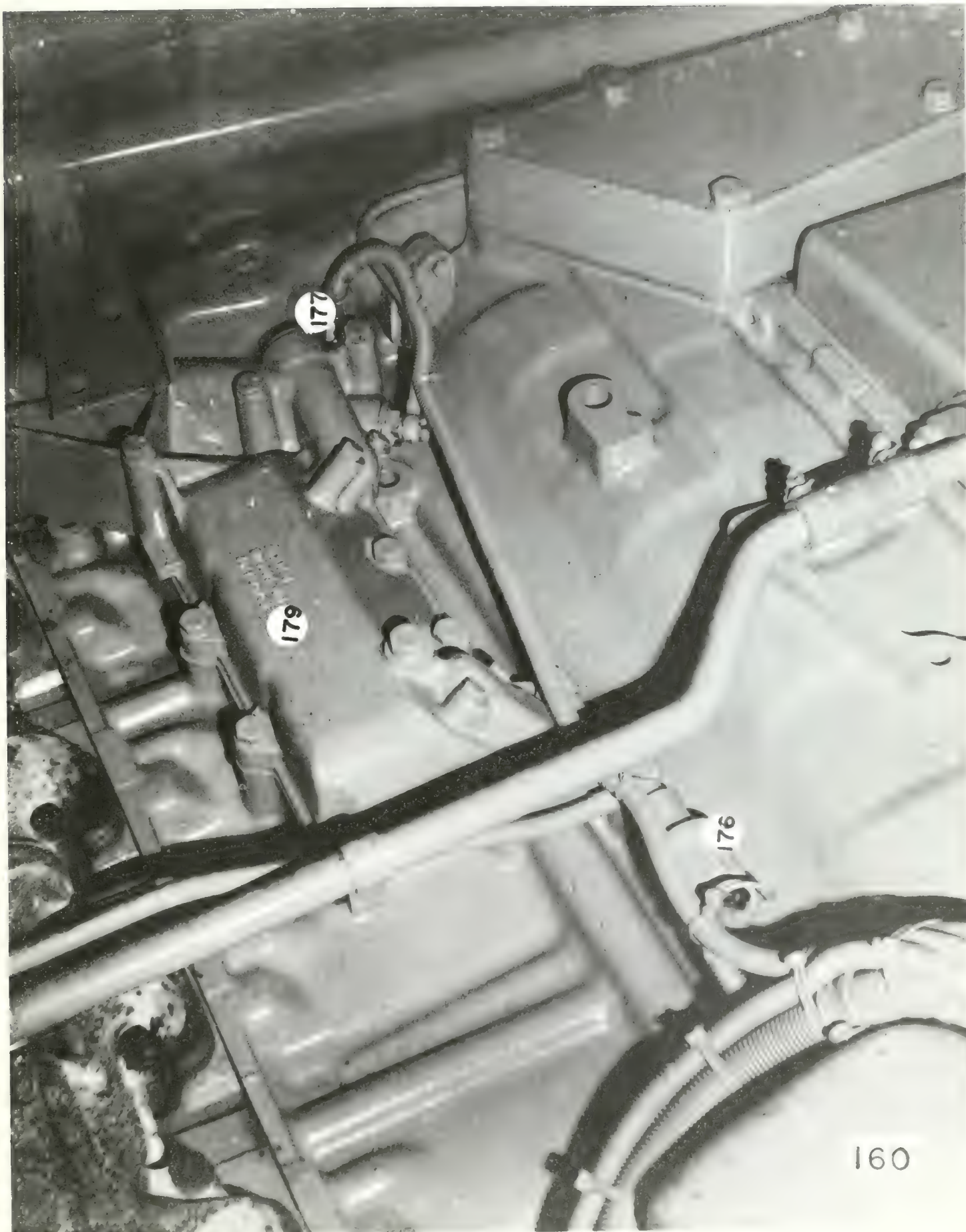




















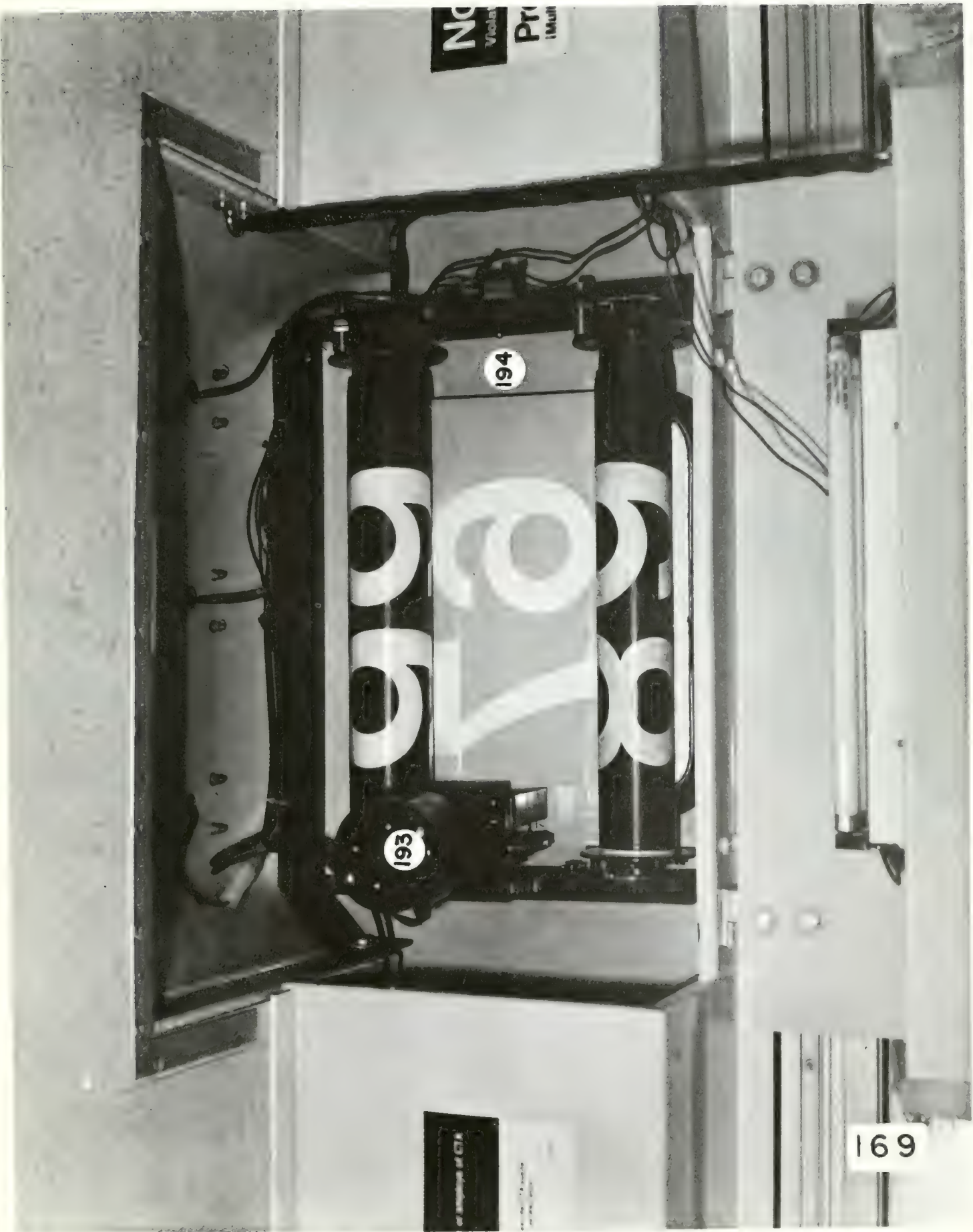
164





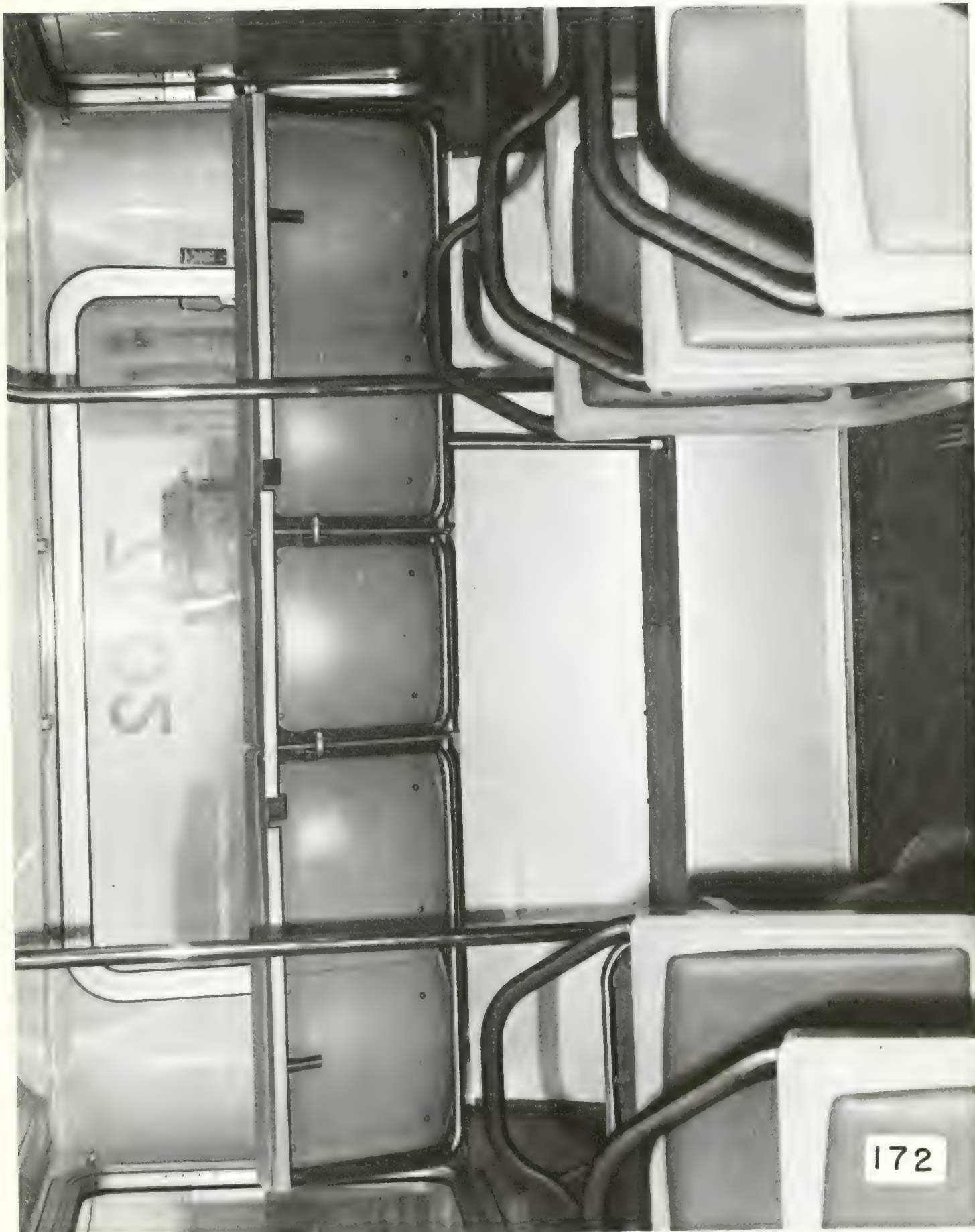




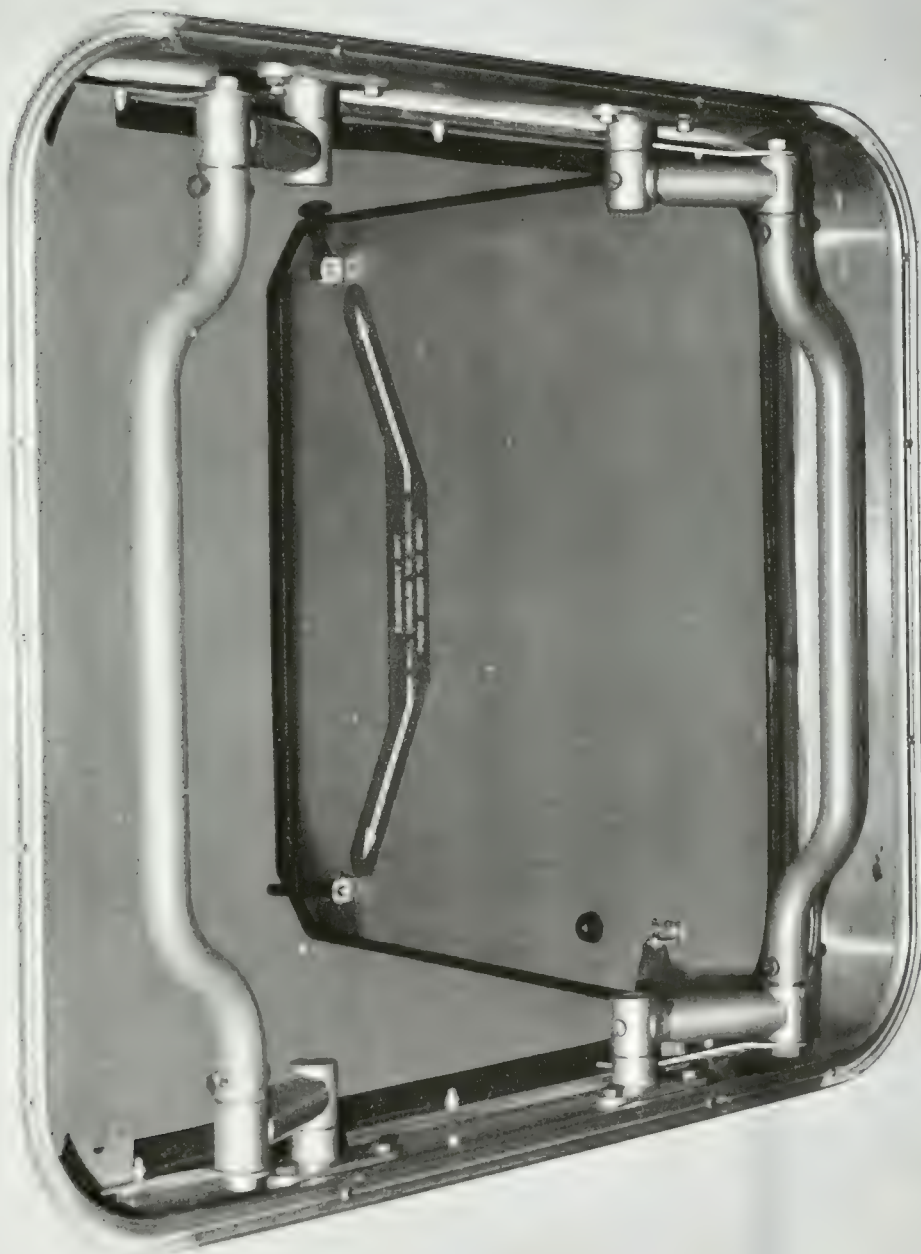




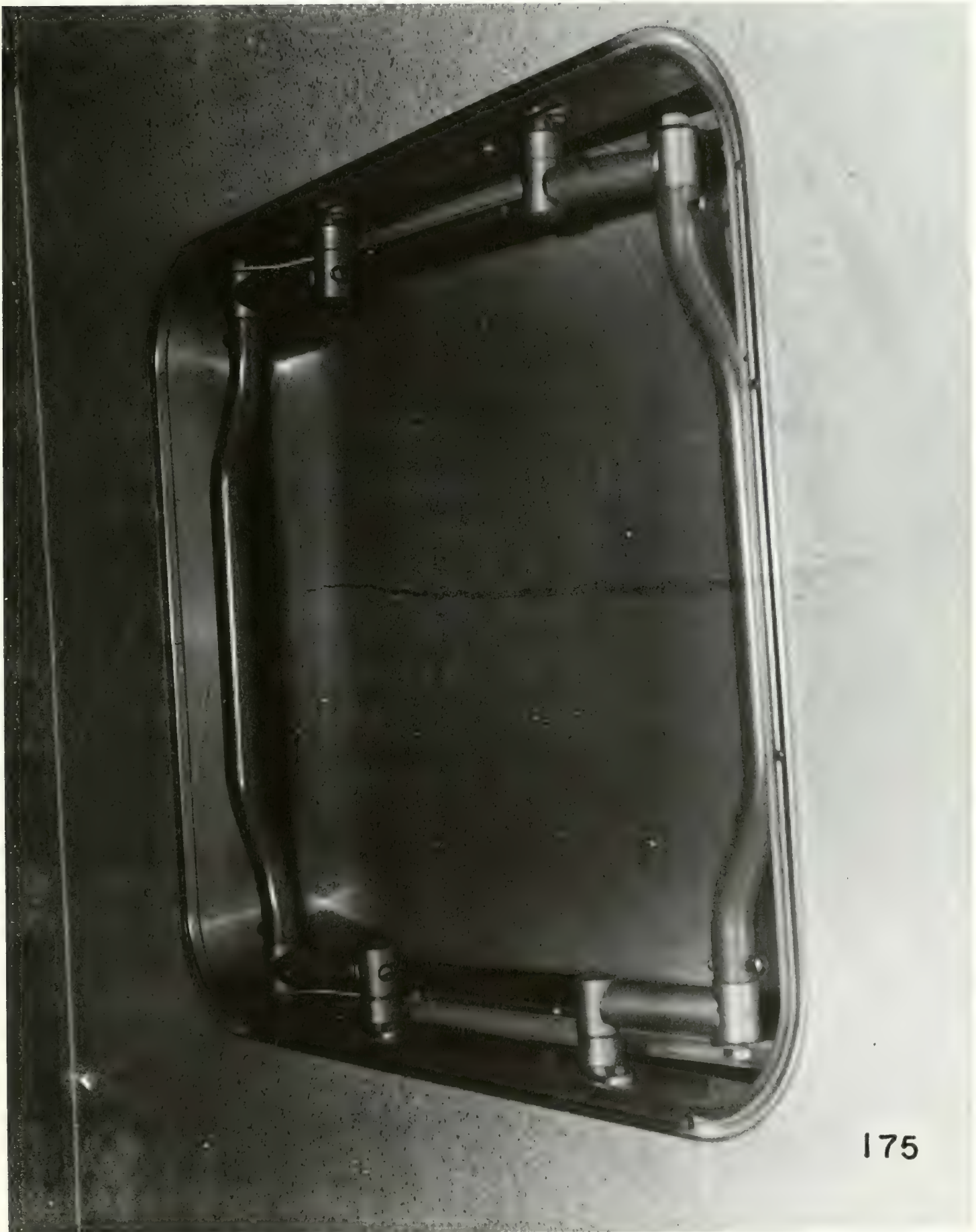


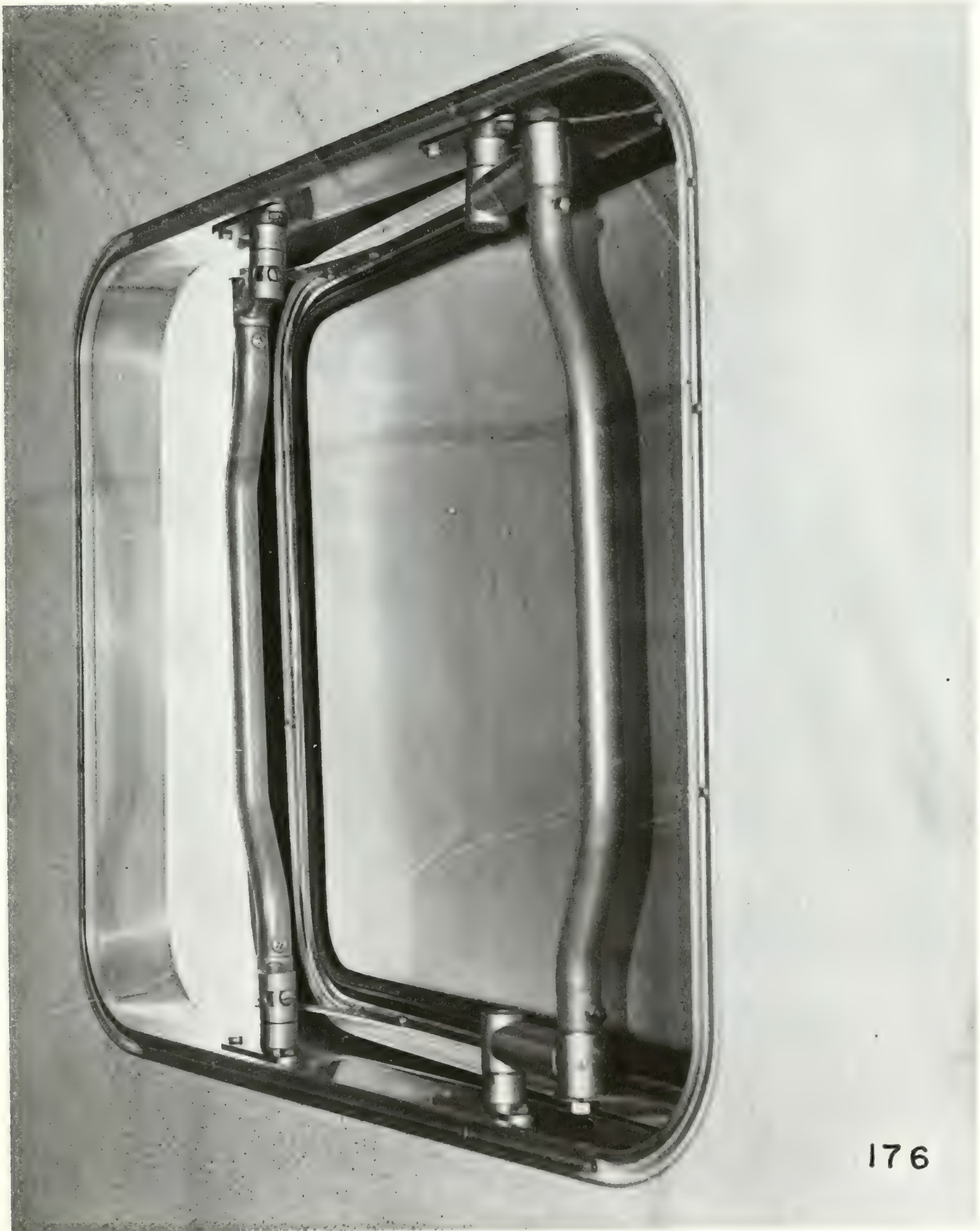


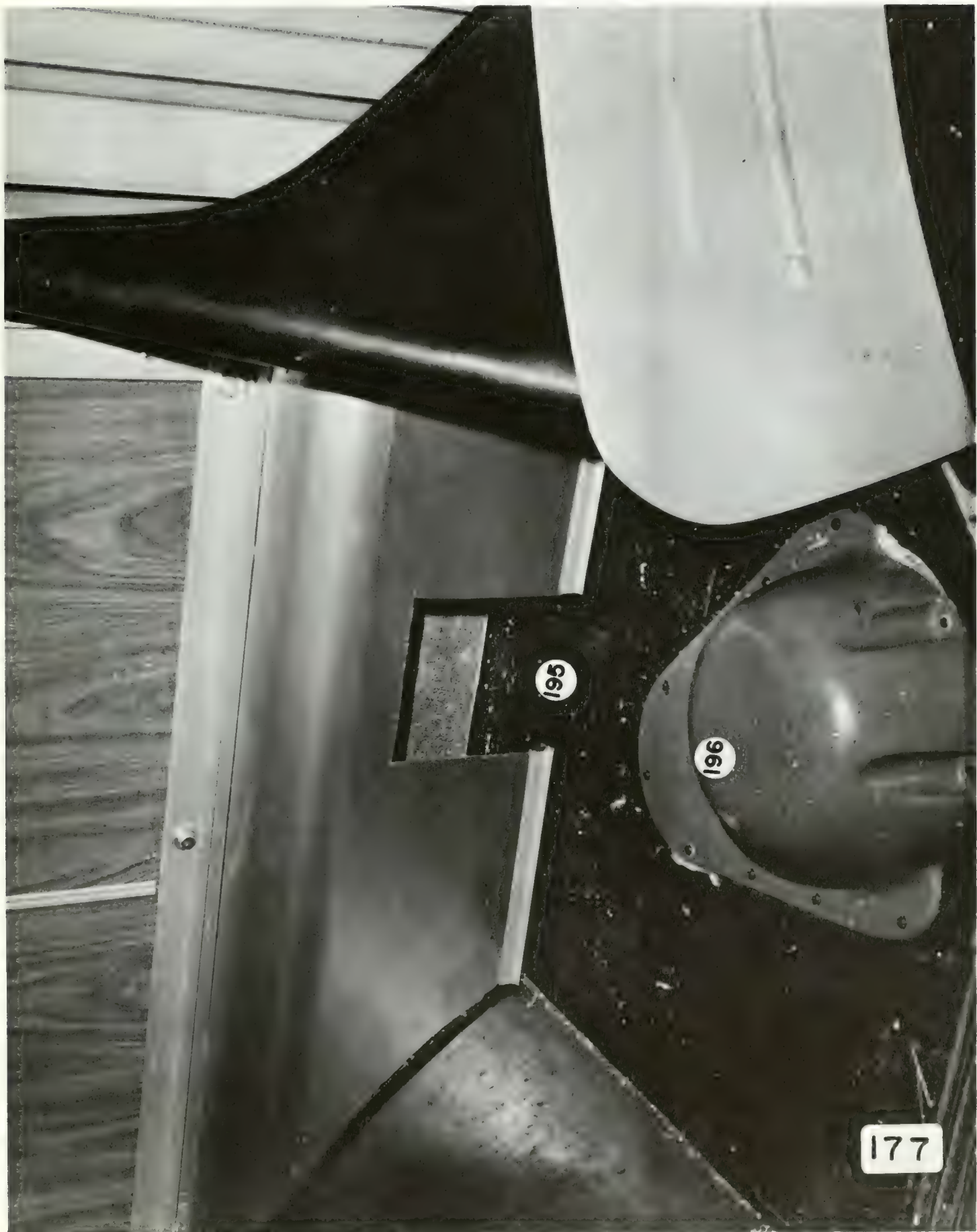




174

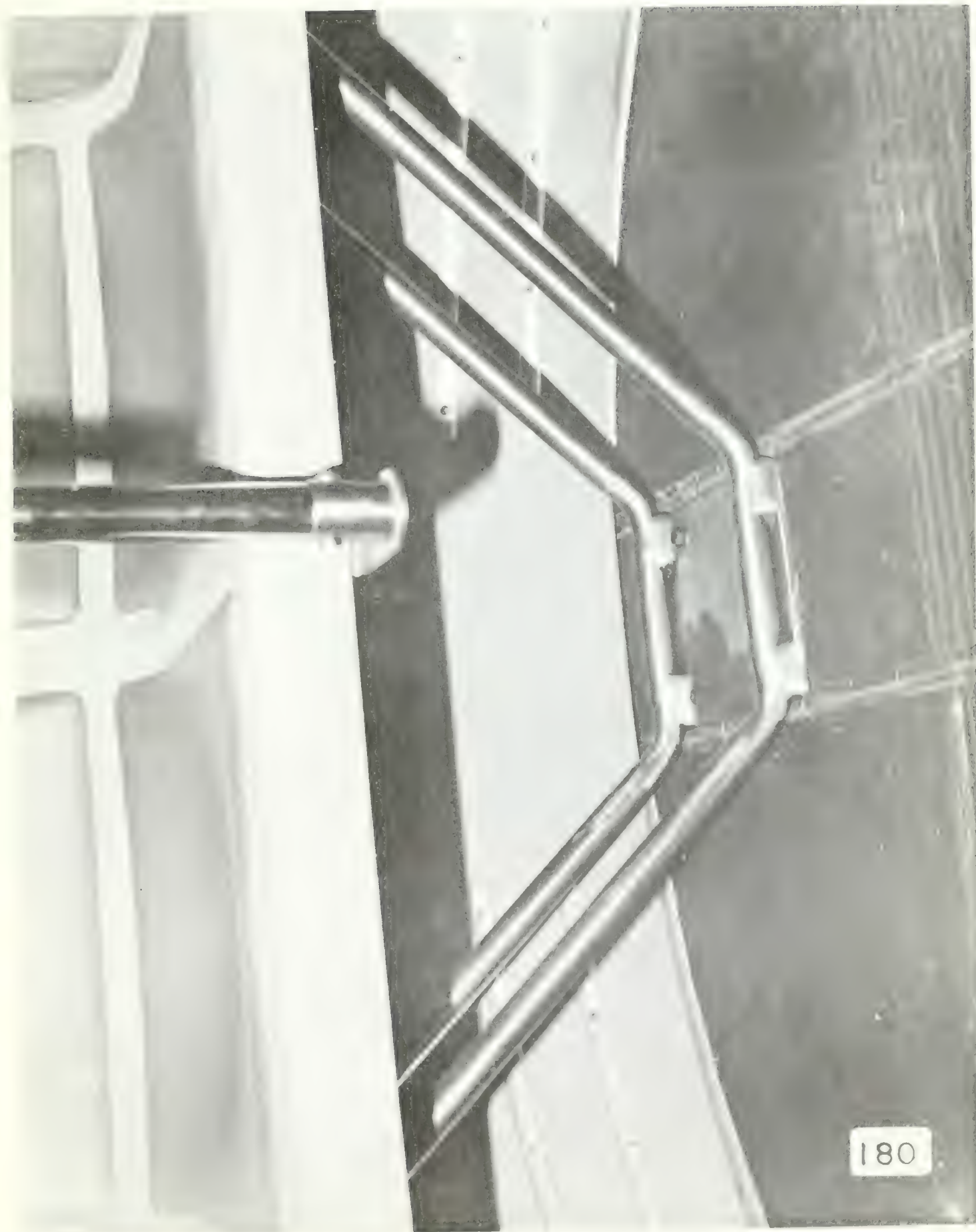


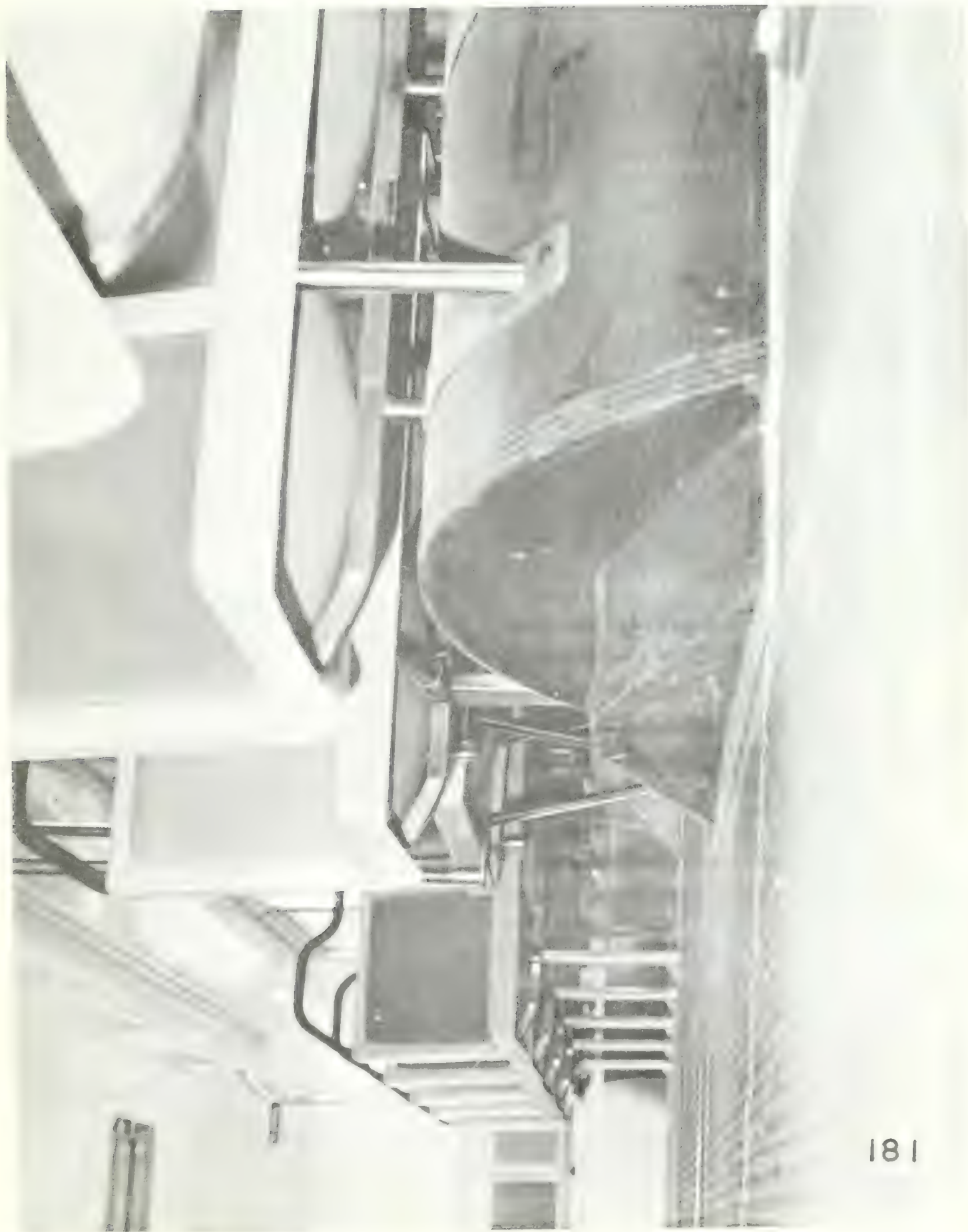














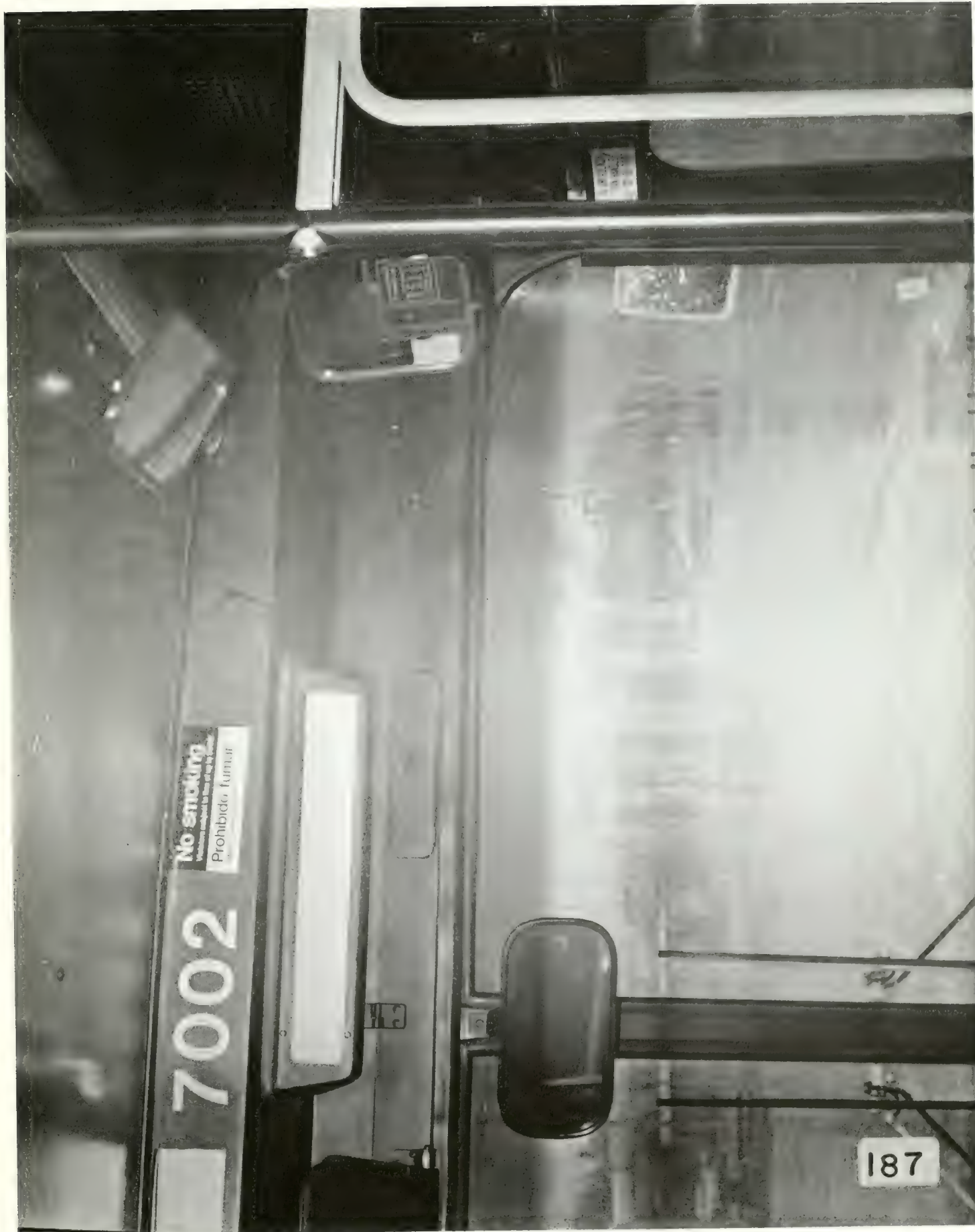








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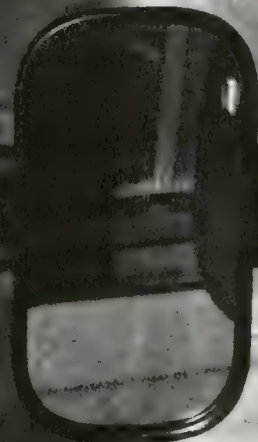


No smoking
Violators subject to fine of up to \$500

Prohibido fumar
Multa hasta por \$500

7002

For your protection,
this door has been
locked with a
lock that is not
to be used.

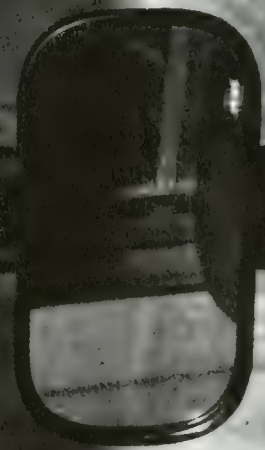
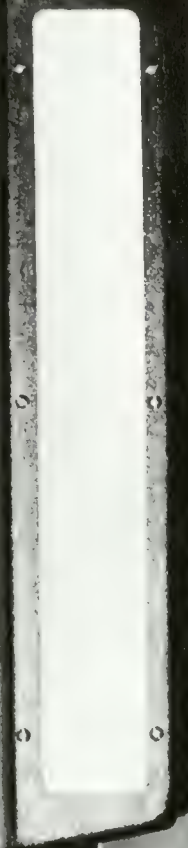


For your protection,
this door has been fitted with a
lock. Please do not use the
lock for any purpose.

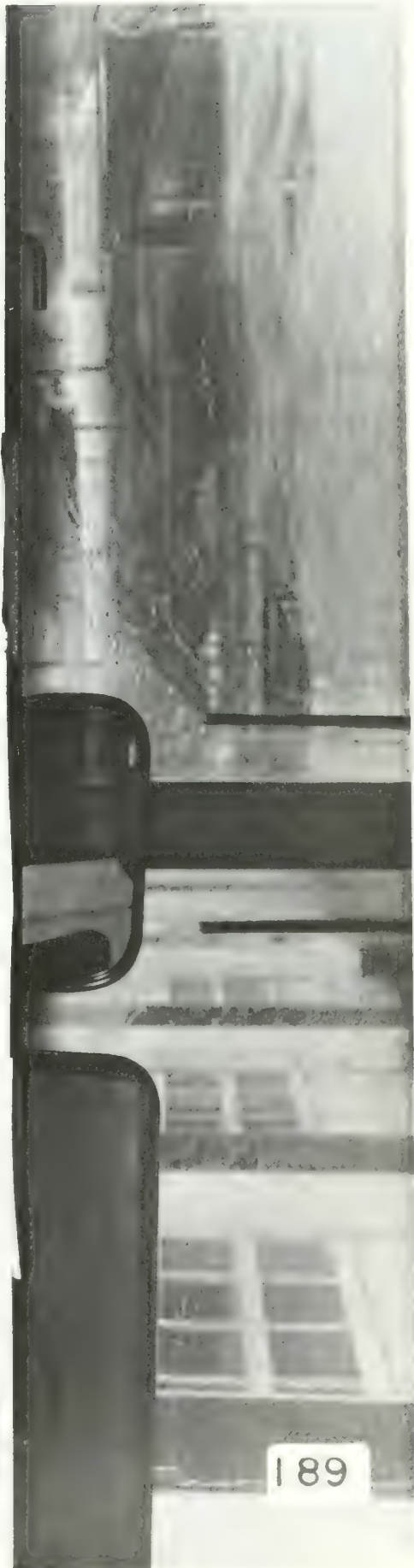
7002

No smoking
Violators subject to fine of up to \$5000

Prohibido fumar
Multas de hasta por \$5000





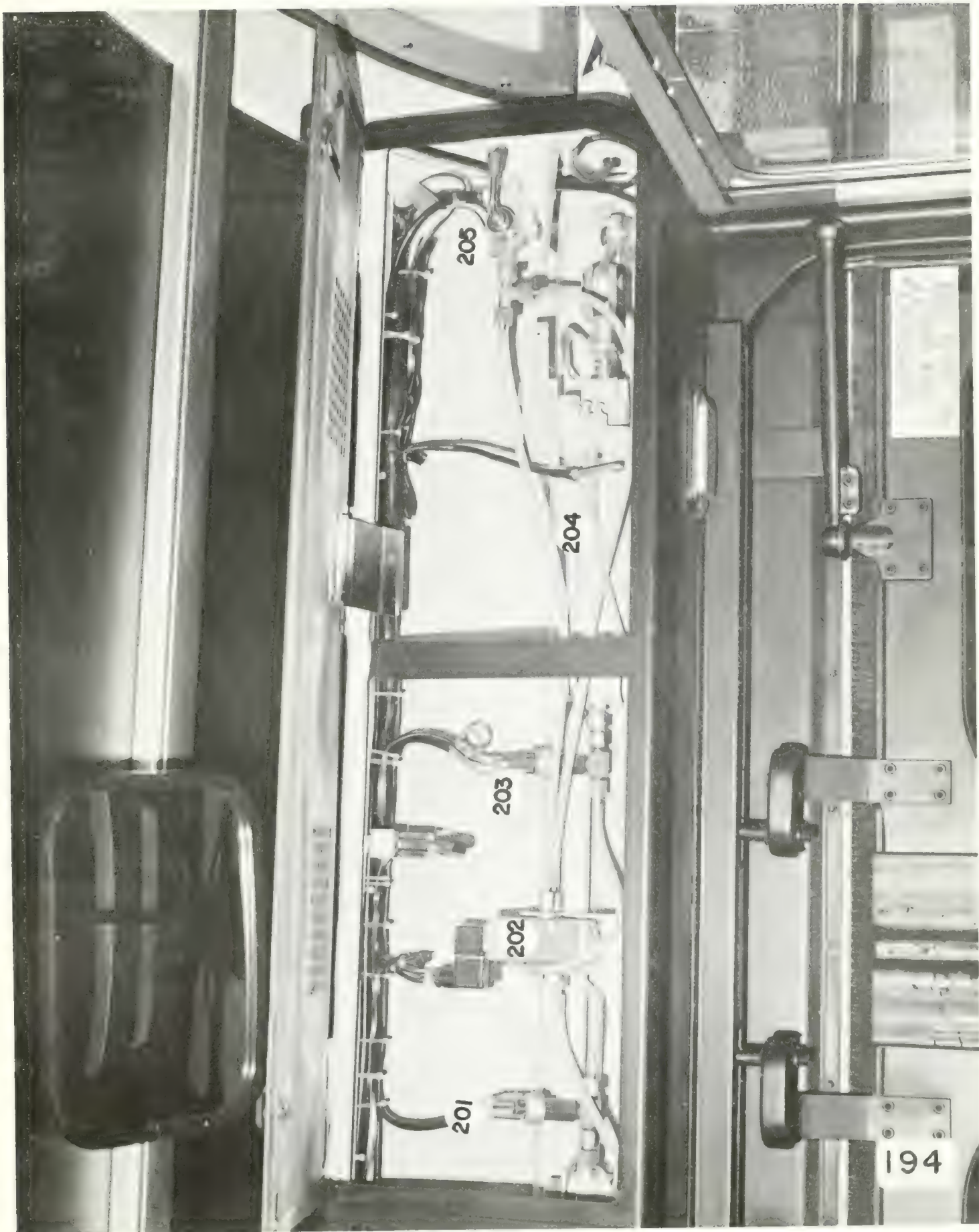








EMERGENCY
TURN HANDLE
COUNTER CLOCKWISE



200

206

EMERGENCY
TURN HANDLE
COUNTER CLOCKWISE

IN EMERGENCY
TURN HANDLE
PULL TOP OF DOOR

Emergency exit door
- Pull for green light, then
push door handle gently

Do not use this door
to exit the aircraft
unless instructed by
the flight attendant
or pilot

195

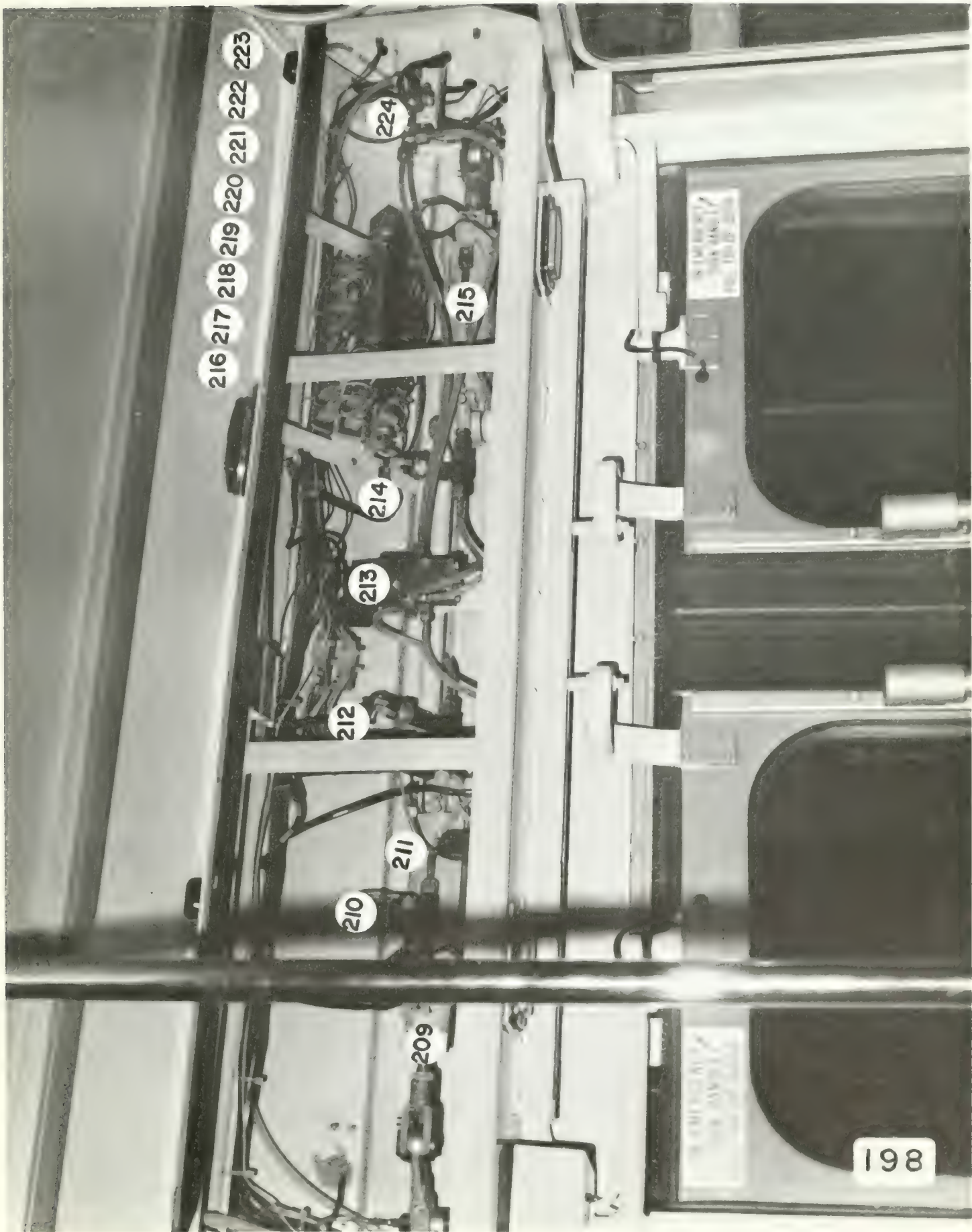


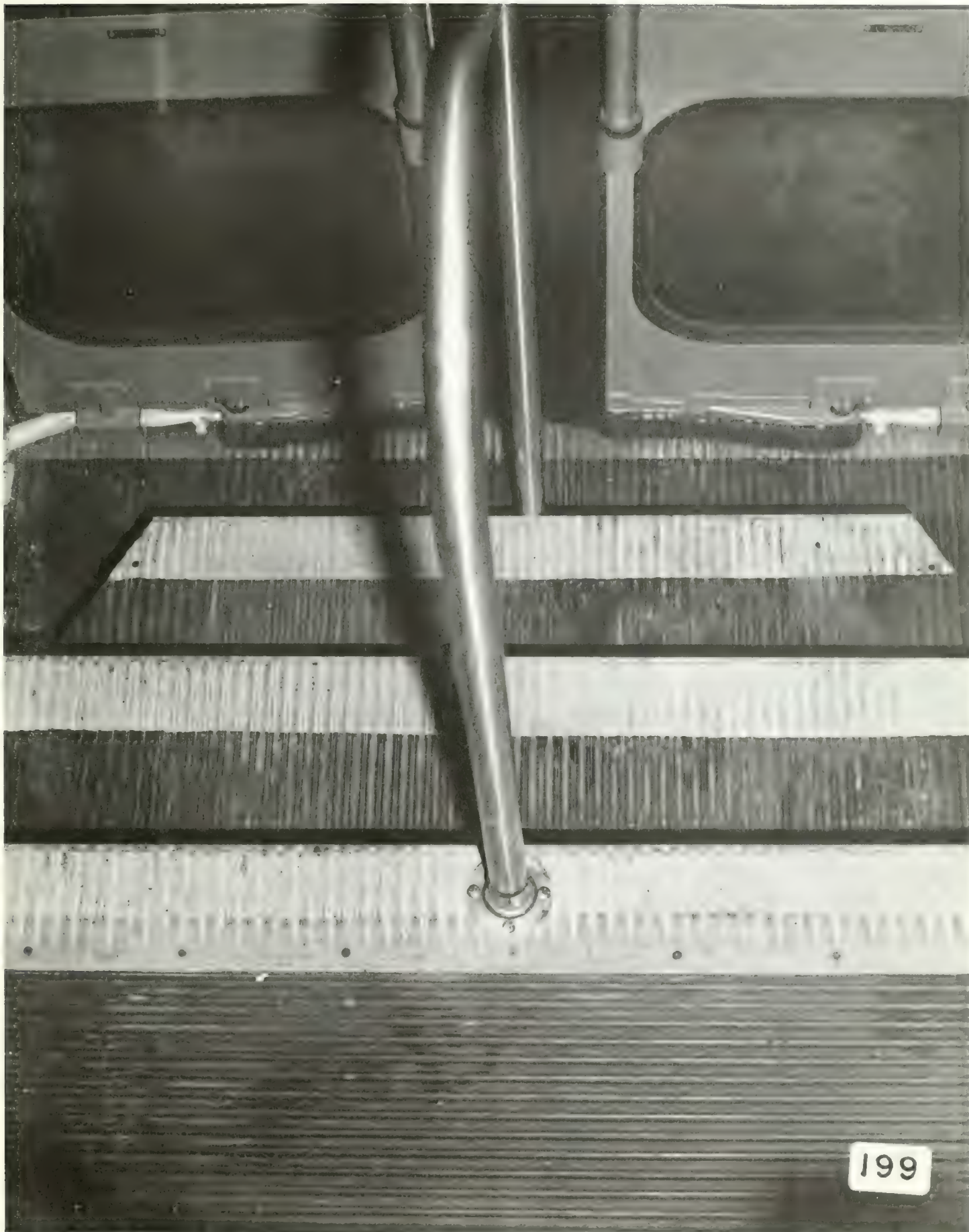
'Easy-out' exit doors
-Wait for green light, then
push door handle gently

Puertas de salida 'Easy-out'
-Espere por la luz verde y luego
empuje suavemente la agarradera
de la puerta

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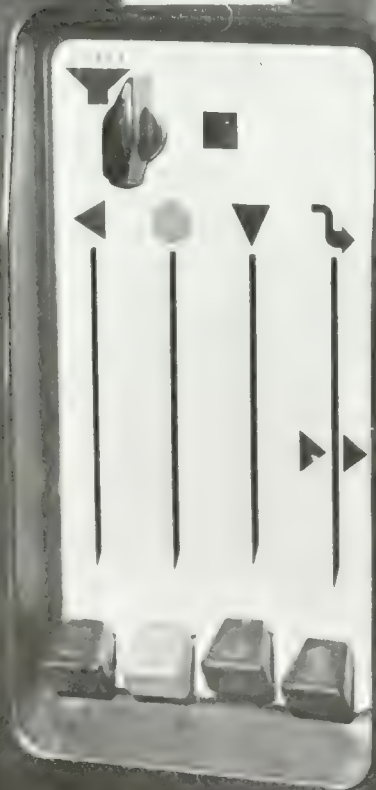
203







DEFROSTER
CONTROLS

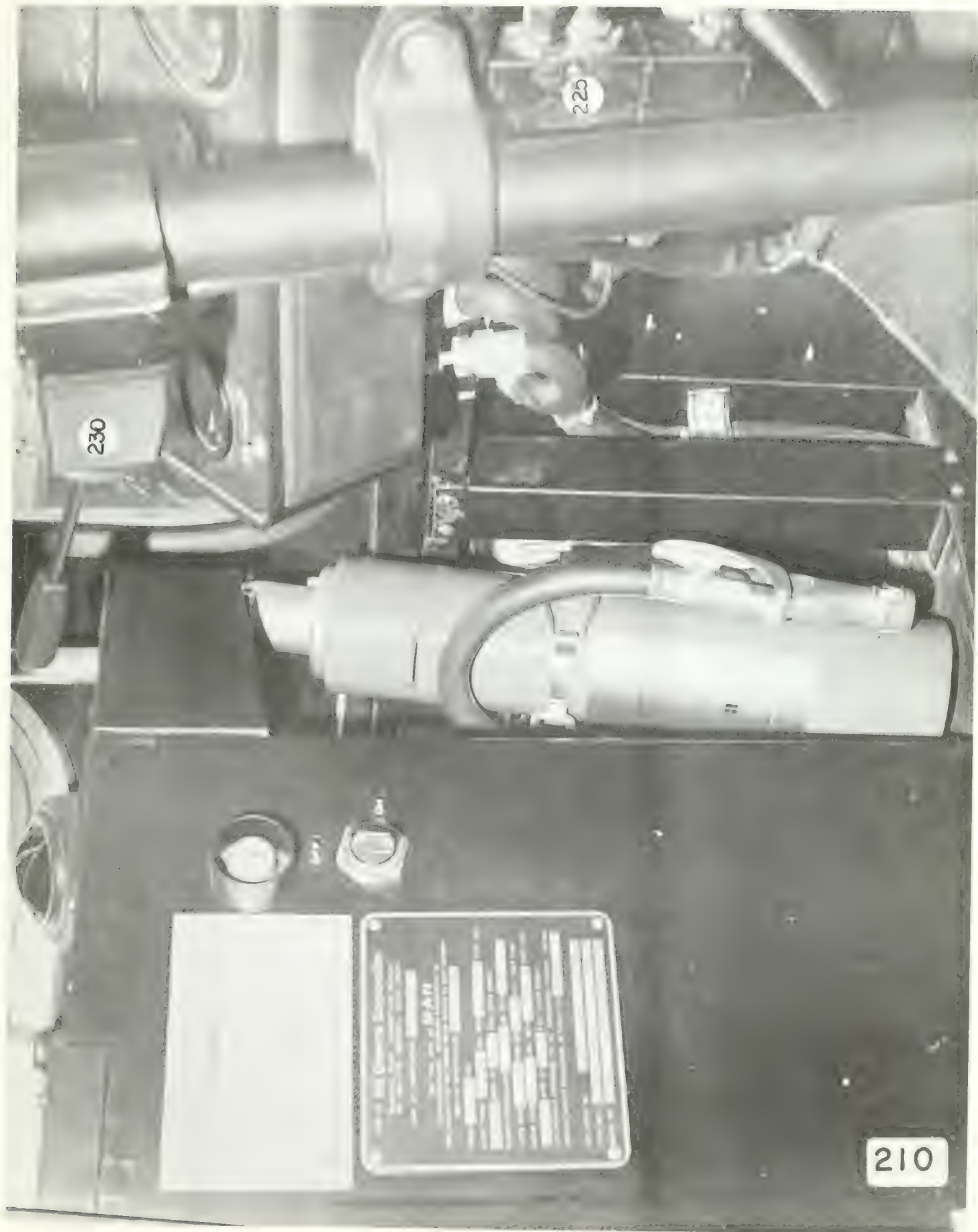




225

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210

225

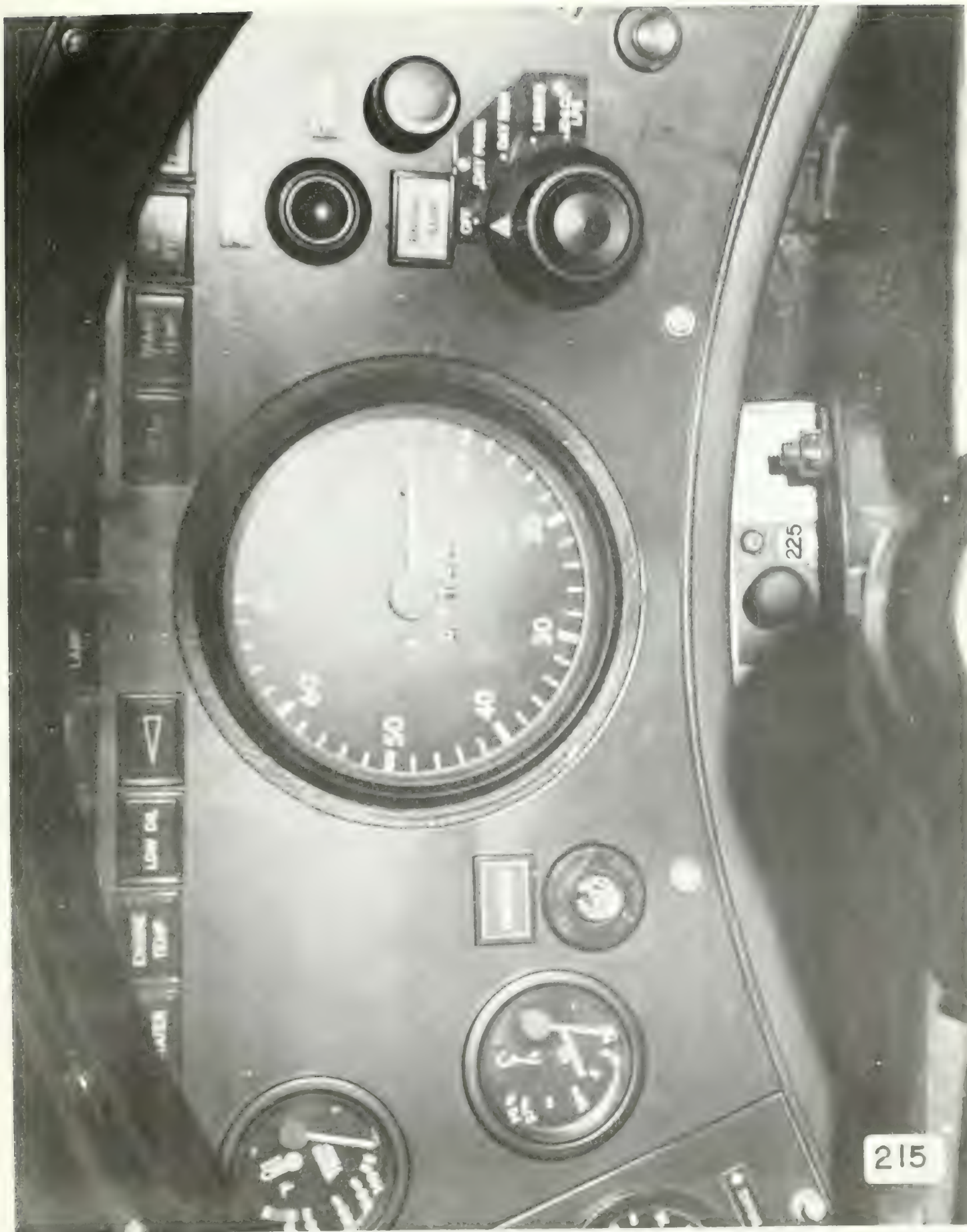
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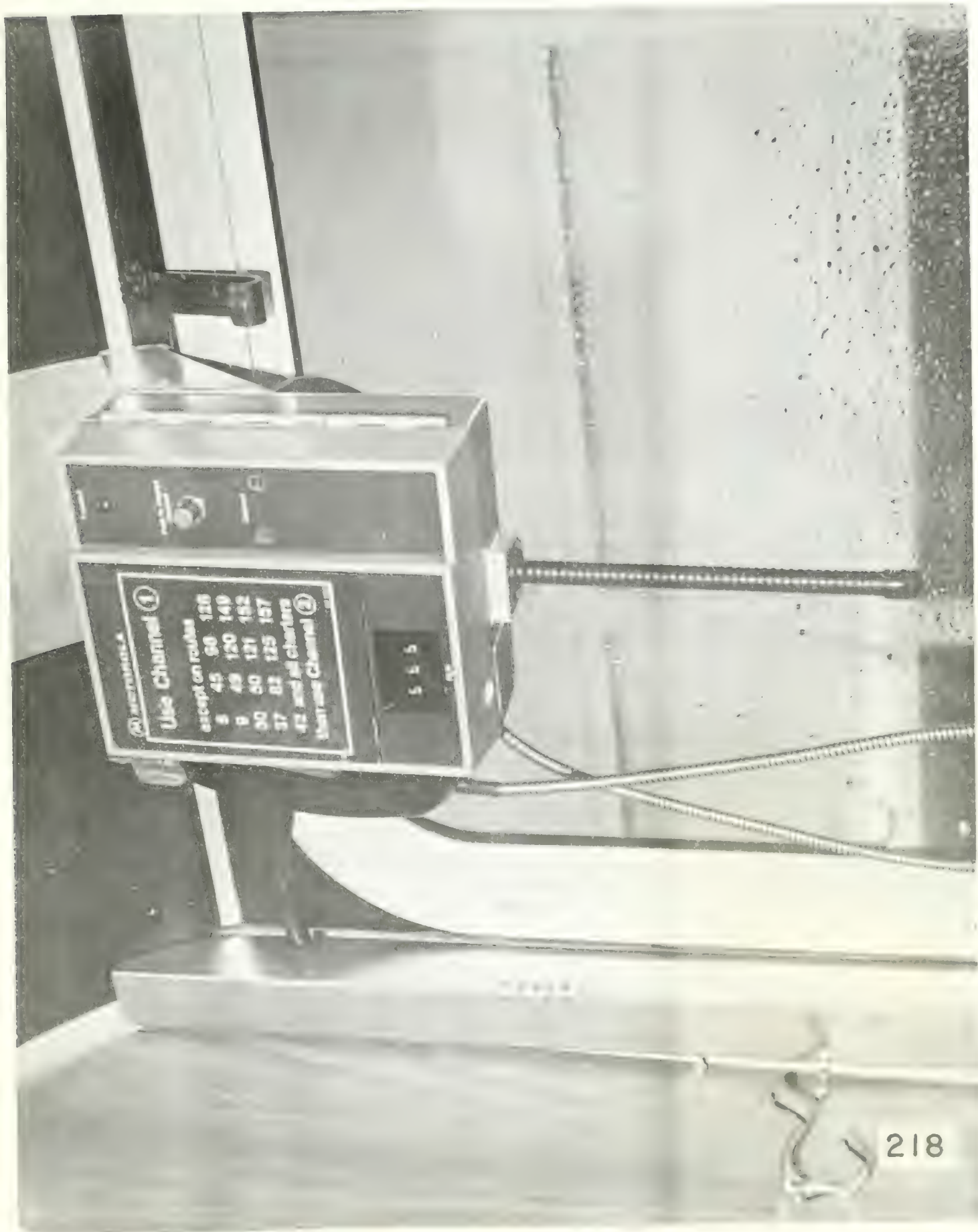






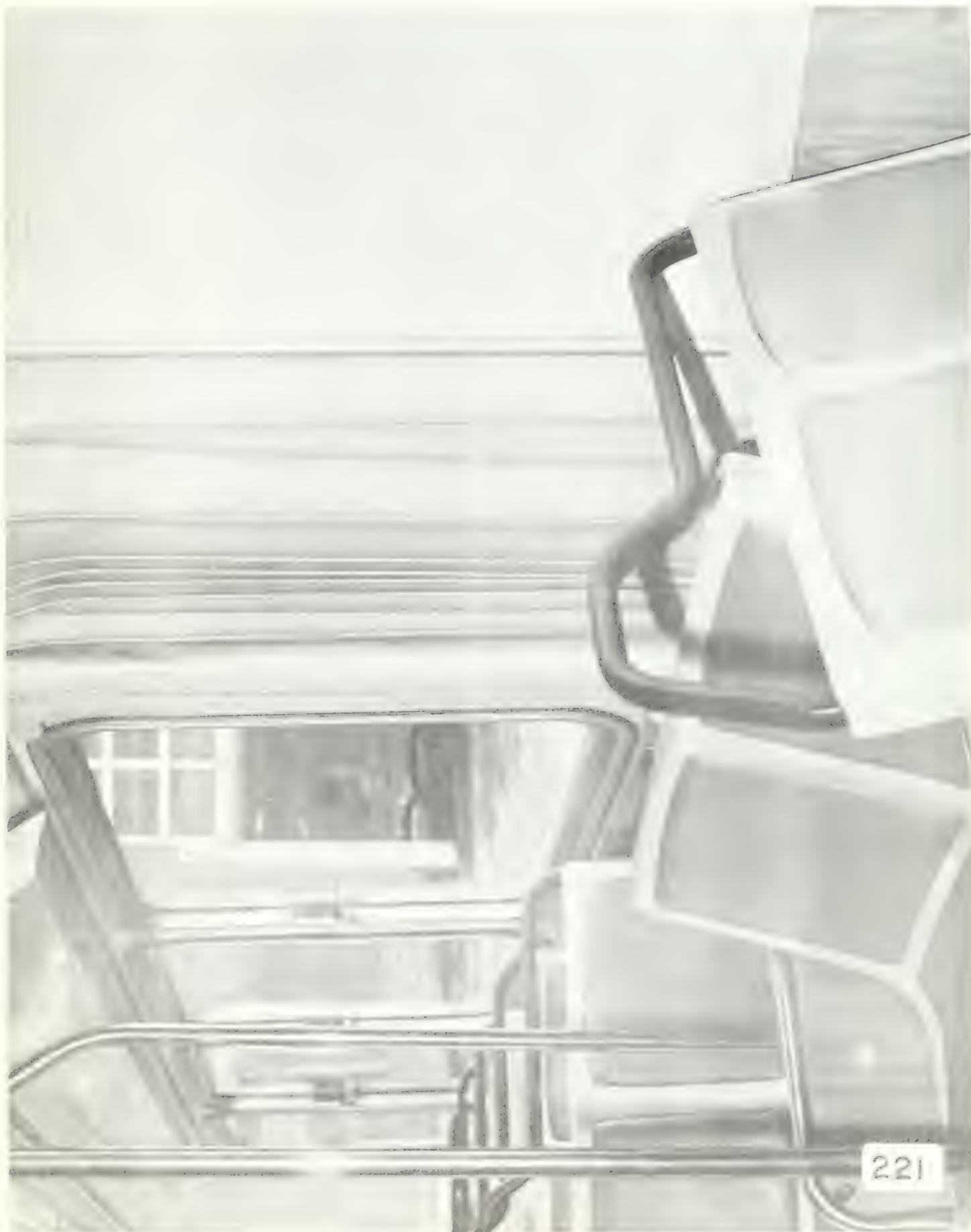




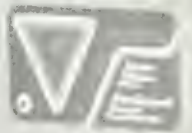






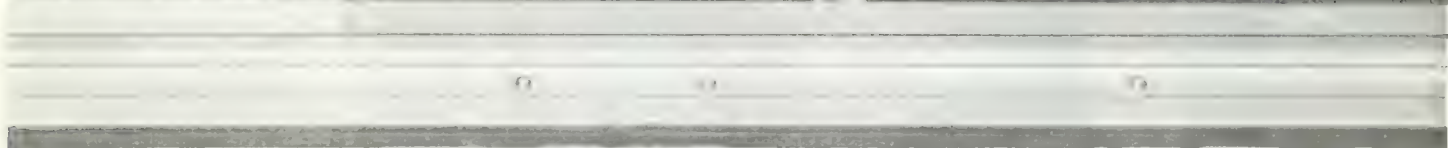






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ARTICULATED BUSES - SERIES 7000-7019

ITEM
NUMBER

PHOTO #2

1. Alcohol evaporator for air system
2. Defroster heater coolant return line
3. Defroster heater coolant supply line
4. Defroster heater core air vent valve
5. Transmission kick down micro switch
6. Accelerator linkage
7. Service brake application valve with transmission
retarder micro switches
8. Power steering gear assembly

PHOTO #3

9. Air conditioning hour meter
10. Air conditioning ambient temperature switch

PHOTO #4

11. Head lamp voltage resistor

PHOTO #6

12. Horn right side of coach

PHOTO #14

13. Transmission printed circuit control box
14. Turn indicator flasher unit
15. Hot engine coolant warning switch
16. Driver's air tube to console air outlet

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- 17. Engine oil filler pipe
- 18. Engine oil level dip stick

PHOTO #18

- 19. Battery equalizer
- 20. Voltage regulator
- 21. Webasto heater control relays and switches
- 22. Engine starter motor relay
- 23. Heater box blower motors 160 amp master circuit breaker

PHOTOS #19 - 20

- 24. Webasto heater controls
- 25. Combustion chamber and water jacket
- 26. Webasto heater fuel filter

PHOTO #36

- 27. Power steering lines from reservoir
- 28. Engine emergency shutdown solenoid
- 29. Manual fuel pump
- 30. Engine fuel filters
- 31. Engine air intake to filters
- 32. Engine air filters
- 33. Engine air filter restriction indicator

PHOTO #38

- 34. Power steering oil reservoir
- 35. Engine coolant filler pipe
- 36. Engine coolant automatic pressure relief valve

PHOTO #44

- 37. Location of A/C engine oil cleaner
- 38. A/C Refrigerant compressor
- 39. A/C Engine final fuel filter
- 40. A/C Refrigerant compressor high head pressure switch
- 41. A/C Maintenance free batteries

NUMERICAL INDEX OF COMPONENTS
(Continued)

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PHOTO #55

- 42. Front axle brake reservoir
- 43. Front axle brake reservoir
- 44. Drive axle brake reservoir

PHOTO #56

- 45. Leveling valve, right side drive axle

PHOTO #57

- 46. Leveling valve, left side drive axle

PHOTO #59

- 47. Heater coolant return from trailer
- 48. Heater coolant supply line to trailer

PHOTO #61

- 49. Air conditioning alternator
- 50. Air conditioning alternator voltage regulator
- 51. Air conditioning engine fuel pump
- 52. Air conditioning refrigerant hot gas by pass valve
- 53. Air conditioning primary fuel filter
- 54. Air conditioning engine air filter restriction indicator

PHOTOS #66 - 67 - 68

- 55. Refrigerant condenser core
- 56. Air conditioning Perkins engine coolant radiator

PHOTO #69

- 57. Hot engine shutdown switch
- 58. Speed sensor
- 59. Sixty (60) second time delay
- 60. CR2 Solenoid switch
- 61. CR3 Solenoid switch
- 62. PR2 Solenoid switch
- 63. AR1 Relay
- 64. CR1 Relay
- 65. CR4 Relay
- 66. CR5 Relay
- 67. CR6 Relay
- 68. Ten (10) second time delay
- 69. Coolant automatic pressure relief valve

NUMERICAL INDEX OF COMPONENTS
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ITEM
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PHOTO #71

70. Coolant reservoir fill cap

PHOTO #73

71. Air line to service brake chamber

72. Park brake release air line

73. Air line to service brake with psi check point

PHOTO #75

74. Pressure protection valve

75. Drive shaft U joint

76. Service brake stoplight switch

PHOTOS #76- 77

77. Service brake chamber

78. Spring applied park brake chamber

PHOTO #78

79. Left side leveling valve link

80. Right side leveling valve link

PHOTO #79

81. Shock absorber, right side drive axle

PHOTO #80

82. Shock absorber, left side drive axle

PHOTO #83

83. Trailer steering drag link

PHOTO #86

84. Trailer, left side air suspension air reservoir

PHOTO #88

85. Leveling valve, right side trailer

86. Leveling valve link

PHOTO #89

87. Trailer, right side air suspension reservoir

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ITEM
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PHOTO #90

- 88. Leveling valve
- 89. Leveling valve link

PHOTO #93

- 90. Power steering unit
- 91. Power steering pressure check point
- 92. Park brake warning light switch
- 93. Front air pressure warning indicator light switch
- 94. Rear air pressure warning indicator light switch

PHOTO #94

- 95. Micro switch with actuating ramps

PHOTO #95

- 96. Driver's light wiring

PHOTO #100

- 97. Shock mounting bracket, left side tractor
- 98. Access holes to air suspension retaining nuts, left side

PHOTO #102

- 99. Shock mounting bracket, right side tractor
- 100. Access holes to air suspension retaining nuts, right side

PHOTO #104

- 101. Fresh and recirculated air inlet opening

PHOTO #105

- 102. Fuel tank access

PHOTO #106

- 103. Location of driver's air blower

PHOTO #107

- 104. Belt driven air compressor
- 105. Belt tension adjusting idler pulley
- 106. Engine coolant fan
- 107. Radiator and fan shroud

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PHOTO #108

108. Gear driven air compressor
00. Power steering pump

PHOTO #109

109. Engine crankcase breather
110. Engine oil pressure temperature gauge and compartment light switch
111. Engine shutdown cylinder
112. Final engine fuel filter
113. Engine fuel injection pump
114. Fuel lines to engine cold start plugs
115. Refrigerant low and high pressure lines

PHOTOS #112 - 113

116. Transmission breather and fill cap
117. Transmission oil level dip stick
118. Transmission oil filter

PHOTO #117

119. A/C Engine fuel supply line shut-off valve
120. A/C Engine fuel return line shut-off valve

PHOTO #118

121. Muffler heat baffle

PHOTO #122

122. Trailer steering drag link
123. Refrigerant suction line
124. Refrigerant pressure line
125. Cover trailer modulating valve

PHOTO #126

126. Tractor, front axle brake load proportioning valve
127. Pressure protection valve
128. Automatic moisture ejecting valve
129. Four circuit protection valve
130. One-way check valve
131. Supply air reservoir
132. Accessory reservoir
133. Drive axle brake reservoir

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PHOTO #127

- 134. Horizontal hinge angle brake switch
- 135. Pressure limiting valve
- 136. Drive axle wishbone support

PHOTO #128

- 137. Tractor modulator valve

PHOTO #129

- 138. Pressure regulator for heater box motor rpm

PHOTO #131

- 139. Trailer axle brake load proportioning valve
- 140. Trailer brake air reservoir
- 141. Trailer suspension air reservoir
- 142. Accessory air reservoir

PHOTO #132

- 143. Marine pump
- 144. Heater box
- 145. Heater box blower motor

PHOTO #133

- 146. Modulating valve trailer
- 147. Fuel tank

PHOTO #134

- 148. Trailer steering linkage reversing lever

PHOTO #135

- 149. Heater supply and return coolant lines
- 150. Refrigerant suction and pressure lines

PHOTO #136

- 151. Cable and turnbuckle for securing bellows to coach

PHOTO #137

- 152. Manual drain valve

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- 153. Muffler location for unloader
- 154. Air compressor unloader valve

PHOTO #140

- 155. Stoplight switch horizontal hinge angle

PHOTO #141

- 156. Drive axle quick release relay valve, right side
- 157. Drive axle quick release relay valve, left side
- 158. Trailer brake control valve
- 159. Drive axle brake loading proportioning valve

PHOTO #142

- 160. Air filter main air line
- 161. Pressure charging valve

PHOTO #147

- 162. Rod assembly locating
- 163. Arm locating

PHOTO #148

- 164. Warning and brake application ramps
- 165. Warning switch
- 166. Brake application switch
- 167. Ball joint assembly carrier

PHOTO #150

- 168. Junction box, electrical

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- 169. Battery box
- 170. Voltage regulator compartment

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- 171. Alternator
- 172. 105° temperature switch

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- 174. Transmission oil heat exchanger
- 175. Transmission assembly

PHOTO #155

- 176. Oil pressure gauge switch
- 177. Starter protection oil switch
- 178. Engine turbo charger
- 179. Engine oil heat exchanger
- 180. Engine starting motor

PHOTO #156

- 181. Muffler
- 182. Tailpipe

PHOTO #157

- 183. Air compressor unloading valve muffler

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- 184. Service brake stoplight switch

PHOTO #159

- 185. Engine cold start plugs

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- 186. Coolant temperature gauge switch
- 187. Radiator fan control switch
- 188. Coolant overheat warning switch
- 189. Engine thermostat
- 190. Engine compartment light
- 191. Engine oil filter

PHOTO #164

- 192. Grad-U-stat

PHOTO #169

- 193. Sign curtain control motor
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PHOTO #177

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PHOTO #190

197. Front destination sign curtain motor
198. Voice page speaker

PHOTO #191

199. Door master switch

PHOTO #192

200. Passenger chime signal switch

PHOTO #194

201. Stepwell and curb light
202. Door control mag valve
203. Stepwell and curb lights
204. Door operating cylinder
205. Emergency door opening air release valve

PHOTO #195

206. Passenger chime and switch

PHOTO #196

207. Cam switch

PHOTO #197

208. Passenger signal light indicating doors unlocked

PHOTO #198

209. Forward door leaf operating cylinder
210. Sensitive edge pressure switch
211. Sensitive edge switch
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215. AFT door leaf operating cylinder
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- 221. Sensitive edge relay
- 222. Door fully open relay
- 223. Door fully open relay
- 224. Emergency door opening release valve

PHOTO #208

- 225. Park valve emergency release valve

PHOTO #209

- 226. Silent alarm switch
- 227. Entrance door dump valve
- 228. Fire extinguisher bracket
- 229. Exit door sensitive edge alarm buzzer
- 230. Turn indicator switch

PHOTO #211

- 231. Engine emergency shutdown switch
- 232. A/C engine start switch
- 233. Driver's ceiling light switch
- 234. Interior light switch
- 235. Passenger stop signal switch
- 236. Engine fast idle switch
- 237. Exit door open by-pass switch
- 238. Entrance and exit door leaf control switch
- 239. Webasto heater indicator light
- 240. Warning buzzer for, engine low oil pressure, low air pressure
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- 241. Park brake release valve
- 242. Driver's air flow ball
- 243. Entrance and exit door control valve

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- 244. Adjustable air flow heat duct
- 245. Head lamp dimmer switch
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